Subsurface Investigation Franklin Falls DAM, N.H.

contract No. DACW33-85-D-0012 Del. Order No. 0002

STONE & WEBSTER ENGINEERING CORPORATION



245 SUMMER STREET, BOSTON, MASSACHUSETTS

ADDRESS ALL CORRESPONDENCE TO P.O. BOX 2325, BOSTON, MA 02107

W. U. TELEX: 94-0001 94-0977

BOSTON NEW YORK CHERRY HILL. N.J. DENVER HOUSTON DALLAS PORTLAND, OREGON RICHLAND, WA WASHINGTON, D.C.

DESIGN
CONSTRUCTION
REPORTS
EXAMINATIONS
CONSULTING
ENGINEERING

Mr. Richard D. Reardon Chief, Engineering Division U.S. Army Corps of Engineers New England Division 424 Trapelo Road Waltham, MA 02254

October 5, 1987

J.O.No. 15611.02

CONTRACT DACW33-85-D-0012 DELIVERY ORDER 0002

Dear Mr. Reardon:

In accordance with Delivery Order No. 0002, dated July 6, 1987, attached is one copy of our final report with originals for the Inspection, Exploration, and Piezometer Installation at Franklin Falls Dam, Franklin, New Hampshire. This report includes only boring No. FD-87-1 (downstream side of the dam). Boring FD-87-2 (on the upstream side) was completed by the U.S. Corps of Engineers - New England Division staff.

Should you have any questions, please do not hesitate to call the undersigned at (617) 589-2171.

Very truly yours,

Nuri T. Georges Project Manager

Attachments

NTG:ps

ENGINEERING REPORT

for

CONTRACT NO. DACW33-85-D-0012 DELIVERY ORDER NO. 0002

SUBSURFACE INVESTIGATION

Franklin Falls Dam Franklin, New Hampshire

Prepared for:

U.S. Army Corps of Engineers New England Division 424 Trapelo Road Waltham, Massachusetts 02254

October 1987

Stone & Webster Engineering Corporation Boston, Massachusetts

TABLE OF CONTENTS

- 1.0 GENERAL
 - 1.1 Authorization
 - 1.2 Project Site
 - 1.3 Purpose
 - 1.4 Scope of Investigation
- 2.0 QUALITY CONTROL
 - 2.1 Equipment
 - 2.2 Records
 - 2.3 Procedures
- 3.0 QUALITY CONTROL CERTIFICATION
- TABLE 1 Summary of Daily Activities
- FIGURE 1 Test Boring Location
- APPENDIX A Inspection, Exploration, and Piezometer Installation Instruction
- APPENDIX B Field Procedure Used for Liquefaction Assessment (Foundation)
- APPENDIX C Standard Penetration Tests (Blows per 0.1 ft)
- APPENDIX D Field Boring Log
- APPENDIX E Piezometer Installation Report
- APPENDIX F Chain of Custody Log
- APPENDIX G Daily Log of Field Explorations
- APPENDIX H Weekly Safety Meeting Reports

1.0 GENERAL

1.1 Authorization

The work reported herein was performed under Contract No. DACW33-85-D-0012, Delivery Order No. 0002 dated July 6, 1987. The authority for this project was obtained from Department of the Army, New England Division, Corps of Engineers.

1.2 Project Site

The project site is located at Franklin Falls Dam, Franklin, New Hampshire.

1.3 Purpose

The purpose of this work order is to complete the dam safety investigation at the Franklin Falls Dam.

1.4 Scope of Investigation

The inspection, exploration, and piezometer installation instructions provided by the Army Corps of Engineers, New England Division, are included in Appendix A. Field procedure for foundation liquefaction assessment is included as Appendix B.

The subsurface investigation program consisted of drilling through the compacted granular material of the dam without sampling using the ODEX method of advancing the casing. Once into the foundation material, the borehole was advanced using revert mud and the foundation material was sampled at 2.5 ft intervals. Cumulative blows using 140 lb hammer were recorded for each 0.1 ft of sampler penetration to the top of bedrock as shown in Appendix C. Bedrock was cored a distance of 5 ft. Two piezometers were installed in the borehole as shown in the piezometer installation report included in Appendix E.

It should be noted that only one boring, FD-87-1, was completed under the direction of a Stone & Webster engineer (Ms. Janice W. McCoy).

Boring field logs (FD-87-1) are included in Appendix D. Inspection of work associated with completing boring FD-87-2 was performed by the Corps of Engineers staff, New England Division, and is not included in this report.

2.0 QUALITY CONTROL

2.1 Equipment

The following tools and equipment were used to perform the work:

a. Core Drill: The drill rig used was a Failing Model 1500, tilt bed truck rig.

- b. Drive Hammer: The drive hammer used to advance the split spoon sampler was a 140 lb safety hammer.
- c. Casing: The casing through the embankment was 6.5 in. OD ODEX casing advanced using air pressure. For boring FD-87-1, 4.5 in. OD casing was advanced to a depth of 120 ft in order to seal off the coarse sand filter zone at the bottom of the ODEX casing (approximately 80 ft) which was being washed into the samples during drilling operations. A 5 in. roller bit was used to advance the 4.5 in. OD casing.
- d. Drill Rods: "N" size rods with a 3 7/8 roller bit was used to advance the boring between samples. "A" rods with spiders were used during the sampling operations.
- e. Rock Bit: Rock was cored using a 2.5 in. HQ core barrel and reaming shaft.
- f. Piezometers: The piezometers consisted of a 2.0 ft long, 1.5 in. diameter porous stone connected to 3/4 in., Schedule 80 PVC riser pipe. The piezometer was protected by a 2.5 in. steel pipe through the protective rock layer.

2.2 Records

Records were kept of all activities and field procedures. Table 1 gives a description of the daily activities. The test boring log (FD-87-1) includes the following information:

Name of the project

Site location

Drilling agency

Ground elevation at boring location

Date boring performed

Hole number and designation

Depths at which samples or rock cores were recovered including top and

bottom depths of each sampling interval

Method of penetration

Depth of penetration

Type of material encountered

Density of material encountered

Name of driller and inspector

Blows per 6 in. of penetration

Blows per 0.1 ft of penetration on separate form

Depth at which drilling fluid was lost

Depth to bottom of hole

Make and model of equipment

2.3 Procedures

- a. Boring FD-87-1 was located by the U.S. Corps of Engineers, New England Division (NED), at Station 18+10, 149 ft offset downstream from the embankment centerline. The elevation was determined to be approximately 367.0 ft.
- b. The borehole was advanced without sampling through the dam using ODEX equipment. Air pressure was used to remove cuttings from within the 6.5 in. diameter casing. Casing was installed to a depth of 80.5 ft.
- c. Sampling began at a depth of 81.6 ft and the borehole was cleaned between samples with Revert mud and a 3 7/8 in. tri-cone roller bit. Samples were taken at 2.5 ft intervals and blows per 0.1 ft were recorded for a total length of 1.5 ft.
- d. Samples were classified in the field. Representative samples were taken from the split spoon sampler and placed in 16 oz plastic jars with screw top lids. Jars were labeled both on the lid and with stick-on labels with the sample number, sampling interval, boring number, and blows per 6 in. The rock core was also classified in the field and placed in a wooden core box. Chain of custody log was maintained documenting custody between the field and delivery to the lab at NED. The chain of custody log is included in Appendix F.

e. Two piezometers were installed in the boring at different elevations. The boring was backfilled with sand and a bentonite seal was placed above the deep piezometer. Falling head tests were performed on both piezometers in order to verify that they

were working properly. The piezometer tips are porous stone type

with PVC riser pipe.

3.0 QUALITY CONTROL CERTIFICATION

I hereby certify that the above-mentioned records, equipment, and procedures were used to perform the subsurface exploration described herein. I also certify that the work was performed in a professional manner and meets the requirements set forth in the delivery order.

Certified on October 2, 1987

N. T. Georges

Project Manager

Mari V. Seorger

TABLE 1

SUMMARY OF ACTIVITIES

	Dolling of Motivities
Date	Activity
July 27	Monday: T. Wong and A. Firicano on site surveying borehole locations. Driller had left site to get supplies. Received instructions from T. Wong.
July 28	Tuesday: Drill crew working on equipment and had to leave site to get materials such as cable and wood planks.
July 29	Wednesday: Moved dozers to toe of embankment, downstream side. Driller does not have enough rods to complete boring, came with approximately enough to complete a boring 100 feet deep. He called his office to arrange for approx. 70 additional feet of rods and casing. Safety meeting held.
July 30	Thursday: Moved equipment in place to begin drilling boring A (now re-named FD-87-1).
July 31	Friday: Began drilling FD-87-1 and installing ODEX casing. Installed 41 feet of casing today.
Aug 3	Monday: Rainy day. Driller waiting for oil delivery for air compressor. Set casing to 71 feet. Hit water at approximately 65 feet.
Aug 4	Tuesday: Installed casing to 80.5 feet. Drill rig required maintenance, air compressor required oil and spread vermiculite to soak up oil spill on road. Moved soil drilling equipment to hole. T. Wong wants driller to use Revert when advancing boring, but driller brought mostly bentonite (per spec). Driller has some revert he will use and will try to get more sent up with additional rods, etc.
Aug 5	Wednesday: T. Wong, A. Firicano and V. Hom on site to observe soil sampling. Driller will clean with 4 inch tri-cone roller bit and N rods with revert and sample using A rods. Took two samples and cleaned to 86.6 feet. The gauge used to measure blows per 0.1 ft. could not be clamped to the casing, therefore, the driller held it in place on top of the casing. Safety meeting held.

Aug 6 Thursday: Continued soil sampling to 105. 4 feet.

Aug 7 Friday: Continued soil sampling to 120.4 feet. Inspection by N. Georges. Lost drilling mud

between 117 and 118 feet.

- Aug 10 Monday: Additional rods and casing arrived.

 Moved this equipment to hole. Informed driller that a decision to use 4 inch casing below the ODEX to a depth of 120 feet had been made. Cleaned hole with 5 inch roller bit.

 Rain at 1 p.m. stopped work.
- Aug 11 Tuesday: Casing set to 120 feet. Continued soil sampling to 130.5 feet. Samples did not contain the coarse sand as before.
- Aug 12

 Wednesday: One driller's helper not present due to severe toothache. Second helper limping due to being caught by wrench when breaking rods yesterday. (He did not complain of being hurt at the time.) Took one sample. Drilling stopped at 10 a.m. to take helper to doctor to check leg. Doctor said helper should not work for 10 days. Helper will be going home.
- Aug 13 Thursday: No drilling since one helper out with toothache and second helper en route.
- Aug 14 Friday: New helper arrives. The other helper still out with toothache. Sample to 142.8 feet.
- Aug 17 Monday: All necessary personnel on site.
 Continued sampling to top of rock. Very hot
 day. Safety meeting held.
- Aug 18 Tuesday: Began to core rock. A. Firicano on site to inform inspector of piezometer tip elevations. Cored 5 feet of rock and began to install the deep piezometer.
- Aug 19 Wednesday: Continue installing piezometers and backfilling boring. Difficulty removing 4 inch casing due to sand. Hammer was used to remove casing to approximately 85 feet.
- Aug 20 Thursday: Completed piezometer installation and removal of all 4 inch casing. Performed falling head tests on piezometers. J. Hart and T. Wong on site. Driller left with Hart and Wong to visit Hopkinton Dam where his next job will be.
- Aug 21 Friday: Removed ODEX casing. When pulling the ODEX casing, the shallow piezometer was also

pulled up about 7 feet. Driller attempted to wash piezometer back down but was unsuccessful. Per T. Wong try to check piezometer for damage, re-test and attempt to use as is.

- Aug 24 Monday: Finished backfilling FD-87-1. Packed up equipment and moved it down slope with dozer. Performed falling head test on the shallow piezometer to make sure it was working, which it was.
- Aug 25

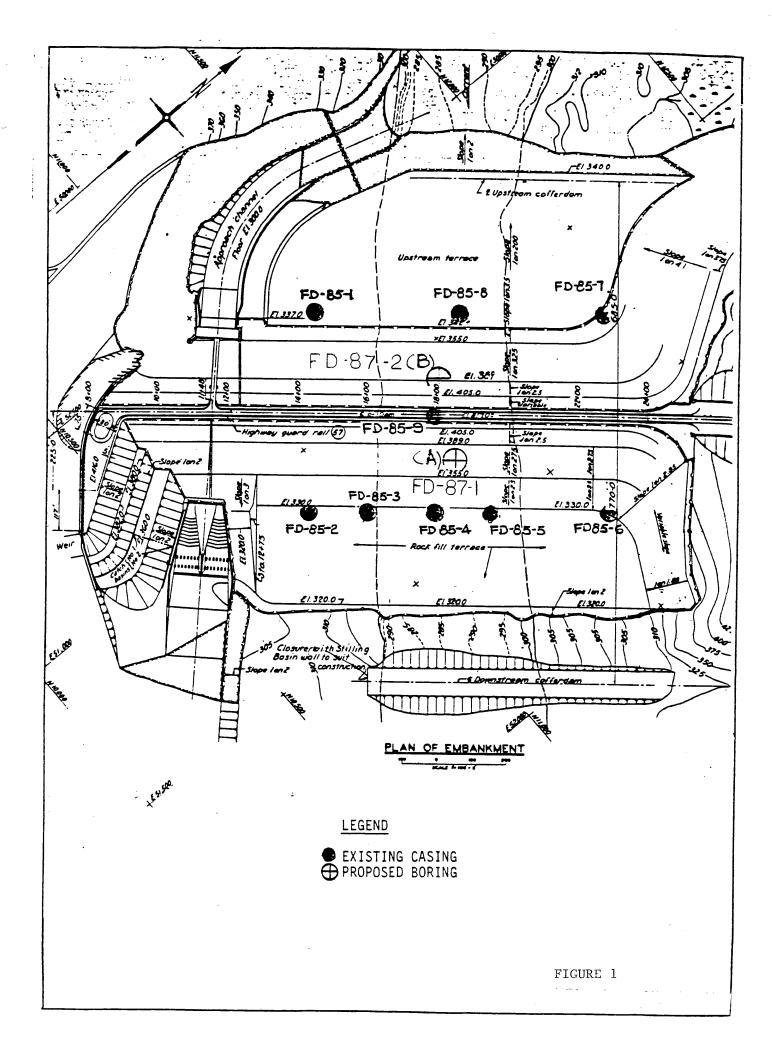
 Tuesday: Dozer operator on site to assist in moving drill rig to upstream slope (FD-87-2).

 Hole re-located 4 feet down slope due to large boulder at the proposed boring location.

 Remainder of day spent moving equipment to hole.
- Aug 26

 Wednesday: Attempted to use ODEX through rocks. ODEX would not work due to break in air supply. Must try to get part re-machined or a new ODEX sent up. Inspector given approval to leave site and return samples for FD-87-1 to Corps of Engineers soils lab. Inspector will return to site if ODEX repaired.
- Aug 28

 Friday: Stone & Webster was informed by Mr.
 Paul L'Hereux to complete draft report for
 work already conducted at the site and submit
 to NED. Stone & Webster will not be required
 to return to site since a U.S. Army Corps of
 Engineers inspector will supervise remaining
 drilling activity.



APPENDIX A

Inspection, Exploration, and Piezometer Installation Instruction

SCOPE OF WORK

ATTACHMENT NO. 1

GEB REQUISITION NO. 87-80 - DACW 33-85-D-0012

DELIVERY ORDER NO. 0002

INSPECTION, EXPLORATION AND PIEZOMETER INSTALLATION INSTRUCTIONS

PROJECT: Test Borings and Piezometers

SITE: Franklin Falls Dam, NH (located on Attach 2)

PURPOSE: Obtain blow count and soil data for liquefaction evaluation and

install piezometers.

1. SCOPE OF INVESTIGATION.

- a. Two test borings shall be drilled by the Corps of Engineers at mid-slope locations on the embankment (Attachment No.2). The depths range from about 140 feet to 160 feet. Rockfill and embankment materials will not be sampled. Standard penetration tests (SPT) shall be done 2.5 ft. on center through the foundation soils to bedrock. Sections, extracts from construction specifications and SPT field procedures for liquefaction evaluation have been provided to you separately. Bedrock shall be cored to a depth of 5 feet. Two piezometers shall be installed in borehole A. Location of the tips will be determined by Mr. John Hart or Mr. Terry Wong after completion of the hole.
- b. The Contractor shall provide a geotechnical inspector for the duration of the explorations and piezometer installation. The inspector shall be experienced in the SPT procedures required for liquefaction evaluations (copy provided separately). The inspector shall provide telephone reports to Mr. Terrance Wong or Mr. John Hart at (617) 647-8177/8389 every working day.
- e. All samples shall be delivered by the inspector to the Corps of Engineers Headquarters in Waltham, Massachusetts. Sample delivery shall be coordinated with the Director, NED Materials and Water Quality Laboratory at (617) 647-8367/8392.

2. SITE CONDITIONS.

The site is at Franklin Falls Dam in Franklin, New Hampshire. Explorations will be done at mid-slope on both the upstream and downstream slopes (Attachment No. 2). SPTs and sampling shall be done in the foundation materials which begin at a depth of 80 feet in Borehole A and 90 feet in Borehole B. Anticipated conditions are shown in sections and specifications provided separately. The site shall be restored to its original condition after completion of the explorations. The restoration must be approved by the Project Manager, Odias LaRoche.

3. RIGHTS OF ENTRY.

The explorations are on Government-controlled land. Entry to the site will be arranged by NED.

4. COORDINATION.

The inspection work is scheduled to start on or about 20 July 1987. The exact starting date will be determined by drill rig availability. Therefore, Mr. Wong or Mr. Yatsevitch will notify the inspector of the start date. Mr. Wong or Mr. Yatsevitch (617-647-8177/8387) shall be notified immediately of any problems encountered.

Prior to demobilization of the drill crew and inspector, approval of the site restoration by the Project Manager, Odias LaRoche, must be obtained. Concurrence of approval from either Mr. Terrance Wong or Mr. John Hart must be verified.

5. EXPLORATIONS

The drive sample borings designated by letters A and B shall be numbered FD-87-1 and FD-87-2 in the order of their completion. The new numbers shall be indicated on the exploration logs and shown on a plan of explorations.

GOVERNMENT REVIEW

The Government will review the draft geotechnical report submittal as well as the completed report. Subsequent to such review the Contractor shall accomplish any corrections which may be directed as a result of Government review.

7. COMPLETION SCHEDULE.

Duration of field work is estimated to be twenty-six days. The geotechnical report shall be submitted in draft format for review by the Government postmarked no later than seven calendar days after completion of the field work. Review will take approximately five calendar days from receipt of draft report. The final geotechnical report shall be submitted postmarked no later than seven calendar days after receipt of the draft report including the action taken on comments.

8. QUALITY CONTROL.

You will be held responsible for the quality of the exploration plans and sketches submitted and for all damages caused the Government as a result of your negligence in the performance of any services furnished under the contract.

Although submissions required by your contract are technically reviewed by the Government, it is emphasized that your work must be prosecuted using proper internal controls and review procedures. The letter of transmittal for each submission which you make shall include a certification that the submission has been subjected to your own review and coordination procedures to insure (a) completeness for each discipline commensurate with the level effort required for that submission, (b) elimination of conflicts, errors and omissions, and (c) the overall professional and technical accuracy of the submission. Documents which are significantly deficient in any of these areas will be returned to you for correction and/or upgrading prior to our completing our review. Contract submission dates will not be extended if a resubmission of draft material is required for this reason.

APPENDIX B

Field Procedure Used for Liquefaction Assessment (Foundation)

FRANKLIN FALLS DAM

FIELD PROCEDURE USED FOR LIQUEFACTION ASSESSMENT (FOUNDATION)

STANDARD PENETRATION TESTS (2.5 FT CENTERS)

- 1. <u>SCOPE</u>. Apparatus and procedures shall be in conformance with ASTM D-1586-84 STANDARD METHOD FOR PENETRATION TEST AND SPLIT-BARREL SAMPLING SOILS, except as modified and/or amplified hereinafter.
- 2. A rope and drum system shall be used to lift the falling weight with two turns of the rope around the drum. The rope shall be replaced before it becomes worn or polished.
- 3. SPT hole diameter shall be kept to a diameter of about 4 inches in the foundation. Where casing is required, 4-inch ID diameter casing shall be used. A centering device (spider) shall be used to center the rods during the standard penetration test in the cased zone.
- 4. A-rods shall be used for sampling in the hole. The type and length of rods used shall be recorded on the boring log for each drive.
- 5. The hole shall be cleaned out to a depth of one foot below previous drive (sampling every 2.5 ft). The split-spoon shall be driven no more than 18 inches including slough, if any. The cumulative penetration resistance per blow, measured to the nearest 0.25 foot shall be measured and recorded with the aid of a graduated measuring rule attached to the casing. Where the penetration per blow is less than 0.1 ft, the measurement shall be made after every other blow, or less frequently, so long as at least one measurement is recorded for each 0.1 ft of penetration. The cumulative number of blows and the cumulative penetration shall be measured and recorded. Depth to the beginning and end of drive shall be measured and recorded for each test. The amount of slough shall be recorded on the forms for the Standard Penetration Tests. Where the amount of slough exceeds 0.25 ft, the sampler shall be pulled from the hole and cleaned out before proceeding with the test.
- 6. Casing shall be used only in zones where an open hole cannot be maintained with mud. Where casing is required to maintain an open hole, the casing shall be at least 1 ft above start of next drive.
- 7. The drilling mud shall be used to support the hole and prevent heave of the bottom of the hole. The weight and viscosity of the drilling fluid shall be controlled so that the cuttings are effectively removed from the hole. Cuttings shall be removed from the hole by stopping rotation at the required depth and maintaining circulation until the final cuttings are removed. The hole shall be cleaned out to the bottom of every SPT sample with a fishtail bit fitted with upward deflectors of the circulation parts.

APPENDIX C

Standard Penetration Tests (Blows per 0.1 ft)

APPENDIX D
Field Boring Log

APPENDIX E

Piezometer Installation Report

		14 1										
		· · ·	PIEZ	OMETER INST.	ALLATION REP	ORT_						
PROJEC	T: Frankl	in Falls		(m	DATE.	Aug	18,198					
		8+10		FFSET FROM ENTER LINE:		un learn	PIEZ NO.: F	-D-87-1A				
PIEZ T	YPE: POYOU	is STON.	e		EZ: 149	DIAM						
(SOIL	IP SET IN TYPE):	Sand		SAMPL	E NO .: - 27	BORI	NG DIAM: 1	K" (button)				
METHOD TYPE (METHOD OF INSTALLATION: Installed in boring FD-87-1 TYPE OF PROTECTION 2 12 17 STall SCIENCE (215)											
FOR P	TYPE OF PROTECTION 2 12 1 STEEL CASING (215) VENT: None FOR PIEZ: GROUND ELEV.: 367.0 GROUND ELEV.: 367.0 OF RISER: 370.2 PIEZ TIP: 218.0											
!		56 7.0						I				
·	FILTER: Sand FROM ELEV: 2087 (Bottom of hole) TO ELEV: 225 SEAL: BENTONITE FROM ELEV: 225 TO ELEV: 233.7											
1	Bentoni Te			L	UNIKALI	14.		*				
	INSTALLED BY: COE Mobile NO.: ODO2 FOREMAN: J.Trimm DATE OF INSTALLATION: 8-18-87 TO 8-21-87 DATE OF OBSERVATIONS: See below											
METHO	METHOD OF TESTING PIEZ: Falling head Test 8-20-87											
TIME	ELAPSED TIME MINUTES	DEPTH TO WATER	TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET (xx	TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET				
	0	0		5	3,87							
	\	3,50		10	4,00							
	2	3,72		15	14,10							
	3	3.78		20	4,18							
	1 4	3,82										
REMAR	ks: Deep	Picto.	paint	ed who	Te + TA	reads a	1 Top					
<u> </u>	stom of g	SICZOMET	er at	35,80	melers	- T/10	of rise					
Wa	Ter level	betare	<u>lest</u>	17 00	9.65m f mbelow gra	10,10,10	<u> </u>					
<u>On</u>	8-21-01 C-24-87	, water	1 41 4T	18.40	m. belou	J 2 (0	ide.					
(1=	52.2' of	riser. P	Olous SE	one + connec	Tion)							
					٨							
					Jane	i W	ne Gy SPECTOR	· · · · · · · · · · · · · · · · · · ·				
					U	111	J. 201010					

PIEZOMETER INSTALLATION REPORT	PIEZOMETER NO.
STONE & WEBSTER ENGINEERING C	J.O. #O.
Franklin Falls Dam	15611,02
DATE 8-18-87 TO 8-19-87 DRILLER J.	Trimm INSPECTOR JW McCoy
DATE OF THE PROPERTY OF THE PR	GROUND ELEV. 367.0
COORDINATES	GROOMS CLEAT.
INSTALLED IN BORING	_ ELEV. TOP OF LEADS
RIG & CREW TIME	
•	
DETAILED INSTALLATION DESCRIPTION:	
Filled Lole with Sand 77, 149!	
Sot piezo and backfilled with	- ~3. (FT) - 3 (FT)
Sand to el. 225. Benjonite	- minim
Dellets installed To el. 233.7.	-
	Second Diczo L'installed
Sond placed to approx 89'	See separate installation
for shallow piczu.	report
DESCRIPTION OF PIFTOMETER TIP	- Sand
DESCRIPTION OF PIEZOMETER TIP AND STAND PIPE ASSEMBLY	_ 149'
Porous stone Tip. 1/2" diam.	BenTonite Control
2' lung	- el 225
314" PVC liser pipe	Sand
TOP painted white	
DESCRIPTION OF SOIL AT TIP	
ELEVATION :	e1 218
Sand medium to time,	Sand (FT)
Trace nonplastic fines,	
very dense	
	
NOTE : SKETCH IN ALL COMPONENT	TS PERTINENT TO THE INSTALLATION FILTER SAND. SEALS, GROUT, CASING, ETC.

• .		0.	L							
			PIEZ	OMETER INSTA	ALLATION REP	ORT	,			
DDO 150	T. Fayer	Calls			DATE.	8-2	4-87			
PROJEC	1: Franklin	18+10	0	FFSET FROM	149' San			=0-87-1B		
LOCATI	ON (STA):	12110	<u> </u>	DEPTH	7.805	RISE	R PIPE 3/2	/ "		
PIEZ T	ON (STA): YPE: POROUS IP SET IN TYPE):	STUDE - 4	YISEY	SOIL	149' SAY Z: 82, 5 E NO.: 1-1	DODI	NC DIAM.	4"+		
						DUKI	NG DIAM.			
METHOD TYPE O	OF INSTALL F PROTECTIO	ATION: Insta	alled 1	n boring 1	-D-81-1					
FOR PI	ΕΖ:	4'2 SICE	Pipe	ELEV. TOP	e-p i VE	ELEV	2 s4	\overline{c}		
TYPE OF PROTECTION 21/2 STORING (21,5 deep) VENT: None FOR PIEZ: GROUND ELEV.: 367.0 FILTER: TO grade FROM ELEV: 233.7 SEAL: Seal within typ 70' FROM ELEV: CONTRACT CONTRACT										
FILTER	: TO grad	e Protect	FROM	ELEV: 2	55, /					
SEAL:	5 Car within	120 70'	FROM	ELEV:	ONTRACT	TO_	ELEV:			
INSTAL	LED BY: 60	E-Mbil	٢	N(ONTRACT	FO FO	REMAN: U. I	vimm		
DATE C	F INSTALLAT	10N: 8-20	-81 10	8-24-87	DATE OF OBS	ERVATION	S:			
TESTIN	G PIEZ.: F	DEPTH TO	lead To	ST (8	DEPTH TO		ELAPSED	DEPTH TO		
TIME	TIME MINUTES	WATER FEET m	TIME	TIME MINUTES	WATER -FEET m	TIME	TIME MINUTES	WATER FEETM		
	0	0	1	4	13.60		25	17.09		
	30 ac	10,90		5	14,46					
		11.32		10	15,30					
	2	11.95		15	16,04			:		
	3	12,50		20	16.61					
REMARI	ks: Diff	icalty 1	nsTal	lling This	PICZOM	eter, Or	igially			
50	T at 89	below ar	ade, u	hile pal	lling Eas	in p	ic 70 pull	c ł		
lu	7,5	and Coul	Lnit	be res	et, Eart	Falling	head Test	. 4		
	(70 Seem	s TO be	WOrk	ing sati	sfactorily	/				
TW	ator level	at 18,	73 m b	elow a rade	0 12 8-	21-87	(19,68m	belowns w)		
		18.	60 m	helow as	adp or 8-	24.87	(19,55r	below riser		
					V					
					Jane	i W	SPECTOR			
						IN	SPECTOR /			

PIEZOMETER INSTALLATION REPORTSTONE & WEBSTER ENGINEERING C	ORP. PIEZOMETER NO. FD-87-18
Franklin Falls Dam	J.O. NO. 15611.02
DATE Aug. 24,1927 DRILLER -	Trimm INSPECTOR JW McCay
CORDINATES	GROUND ELEV. 367, 0
INSTALLED IN BORING	ELEV. TOP OF LEADS.
RIG & CREW TIME	
DETAILED INSTALLATION DESCRIPTION:	
Began installing piezu. Aug. 19 after deep piezo set. Filled hole with sand to 89.2' depth and set piezo	~ 3.1(FT) -3 (FT)
* *	1 11 1 1 1 50~4
when pulling ODEX casing The shallow piezo pulled up 7.1' and could not be	_
reset. Pieza. Tested and works	-
Satisfactorily, Protective pipe 21/2" x 21	
DESCRIPTION OF PIEZOMETER TIP AND STAND PIPE ASSEMBLY	- 82.5' 158,3 (FT
Porous stone Tip 11/2" diam, 21 long	# 1500d 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
314" PVC riser pipe	_
Riser fise cut at top	
DESCRIPTION OF SOIL AT TIP ELEVATION:	2 (FT) el 284.5
Cravel and Sand	Sand (FT)
NOTE : SKETCH IN ALL COMPONENT	S PERTINENT TO THE INSTALLATION FILTER SAND, SEALS, GROUT, CASING, ETC.

APPENDIX F

Chain of Custody Log

	1		,
Page	l l	of	- 1
_			

STONE & WEBSTER ENGINEERING CORPORATION CHAIN OF CUSTODY LOG CORPS OF ENGINEERS, NEW ENGLAND DIVISION CONTRACT NO. DACW 33-85-D-0012, DELIVERY ORDER O

ITEMS	DELIVERED:			FD-87-	1	
	Jar Samples Bottles Core Boxes Undisturbed Sample Logs Sample Bags	Samples	3 boxe 1 box FD-87-	(5'run)		
1.	DATE & TIME RECEIVED 8-26-87 8/24/87	TRANS	& TIME SFERRED -87 4/87	SIGNATURE) W McCon	condition bood ch Good	COMMENTS
3.4.5.6.				V		

APPENDIX G

Daily Log of Field Explorations

NEW ENGLAND DIVISION CORPS OF ENGINEERS, U.S. ARMY WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO.							DATE	8- 2	5-8	7
LOW NO.			NA 11	V 100	AE E1E	IN EVAL	ODATION	c		
		-					ORATION			
PROJECT_	Frank	lin	Fa	lls U	an.	Frank	III. Nt	1	* *	
TEMPORAL	RY ADDRESS	3		· · · · · · · · · · · · · · · · · · ·						
OCATION	WHERE CAL	N BE RE	ACHE	D	-					
HONE			TIME .		 ,	TEMPERAT	URE: N	1AX	MI	N
NEATHER	most	y s	unc	\	75 +			 		
					DRILLIN	G TODAY				15- W. C.
HOLE	AREA	FOO	TAGE	FOOTAGE			MATER	IAL .		
	AREA	FROM	70	TODAY						
FD-87-1		80,5	86.6	6.1		· · · · ·				
eros ser a como de la			-			· · · · · · · · · · · · · · · · · · ·				1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
										
			TE	ST PITS	OR AU	GER BORI	NGS TODA	Y		
HOLE	AREA	DEPT	4	MATERIA	VL.	HOLE	AREA	DEPTH	MAT	ERIAL
	PE	ERSONI	NEL				PL	_ANT US	SED	
	N	AME			HOURS		ITEM		HOURS	BREAKDOWN HOURS
.). M	c Coy				8					
	rimm			· · · · · · · · · · · · · · · · · · ·	8					
J. C					8					
	Bultler				8					
	2 . () () .									
										
				,,						
				-						
					L					

NED DEC 63 198

CHIEF OF FIELD PARTY

NARRATIVE OF DAYS OPERATIONS

Set up	4	i (90CL	5	11-111-8	<u> </u>					
Stantial		001	AL.	17/21	127 11	/ :	30p	m.			
On site		To.	CAM	100	01/9	Tor.	4 E	1/14 1/2 1/2)	· · · · · ·	
	Vict	To 1	John	·	1	1 0m	0 W	<u> 21 Africa</u>	n (3)	120	/
	Engl	mer						·		/	,
land to	r-6	<u></u>	1.2.	Te.		10/0		1.891	÷	<u> </u>	- (
Lakura	2011		<u> 1 km/s</u>	i (e	. Tru	ed		se de	147	2	
11/1/1/	10%	/.	1:6	. /\	<u> </u>	<u> </u>	<u> </u>	1, 1		•	
Look -	2	3-1-17	lles_	of:	<u> </u>	1-5 L	edil	204 C	Low	21/1	Ţ
7 86	<u>, 6</u>	<u> </u>	.,					<u> </u>		_/	
T				·	ŝ	× 1.	- 7		·		
1. De	M. a.	<u> (27</u>	0 m 1 2 m 6	<u> </u>	. K. y	<u>, </u>		<u>- 4150,</u>	NO SI	r-d	
- GAPPU-	Cta	ł (Entropie	2							
				·=·							
		ħ	AAN-HO	DUR\	WORK B	REAKO	OWN				
		T	T	DPUI	T	PREV.		LOST TIME	INSP. 8		
NAME	MOB.	DEMOB.	MOVING	OVB.	BEDROCK	MAINT.		(WEATHER)		MISC.	TOTAL
						ļ			ļ.,	ļ	
									ļ		5 - 5N
									ļ		
									-	-	
		<u> </u>			<u></u>	<u></u>					
			WOE	V F0	R TOM	NDBAN					
				,	······	RROM	Y				
Certinu		<u> </u>	3/1/1g	LALL	}					•	
					<u>/</u>						
											
								····			
											
			FI	ELD	PURCHA	SES					
	TEM			AMOUN	7			ITEM		Α	MOUNT
					7			· · · · · · · · · · · · · · · · · · ·		-	
The state of the s					1						
					1						
			+		7				·		
					1						
											

NEW ENGLAND DIVISION CORPS OF ENGINEERS, U.S. ARMY WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

DORESS - RE CAN SUNN REA	BE RE	TAGE TO TE	FOOTAGE TODAY	DRILLIN	TEMPERAT	MATER	IAL.	MI word	
PODRESS RE CAN	FOO FROM	TAGE TO TE	FOOTAGE TODAY ST PITS	DRILLIN	TEMPERAT	MATER	IAL.	MI word	
PODRESS RE CAN	FOO FROM	TAGE TO 105.4	FOOTAGE TODAY	DRILLIN	TEMPERAT	MATER	IAL.	MI word	
RE CAN	FOO FROM	TAGE TO 105.4	FOOTAGE TODAY //8, 8	DRILLIN	IG TODAY	MATER	IAL	und	
REA	FOO FROM	TAGE TO 105.4	FOOTAGE TODAY //8, 8	DRILLIN	IG TODAY	MATER	IAL	und	
REA	F00 FROM &6.6	TAGE 10 /05.4	FOOTAGE TODAY /8, 8	DRILLIN	IG TODAY	MATER	IAL	und	
REA	FOO FROM	TAGE TO /05.4	FOOTAGE TODAY	DRILLIN	GER BOR	MATER	Y		
	FROM 86.6	105.4 TE	FOOTAGE TODAY	S OR AL	GER BOR	MATER	Y		
	26.6	105.4 TE	ST PITS	OR AL	GER BOR	NGS TODA	Y		
		TE	ST PITS	OR AL	GER BOR	NGS TODA	Y		
REA	DEPT						T		
REA	DEPT						T		
REA	DEPT						T		
REA	DEPT	н	MATERIA	AL	MOLE		055	14.45	
					HOLL	AREA	DEPTH	MAI	TERIAL
									· ·
PEF	RSONI	NEL		•		PL	ANT US	SED :	
NAI	ME			HOURS		ITEM		HOURS	BREAKDOW HOURS
~~				8	-				
			·····	8					
<u> </u>				8					
Cay				8					
	PEI	PERSON	PERSONNEL NAME	PERSONNEL NAME	PERSONNEL NAME HOURS	PERSONNEL NAME HOURS EV	PERSONNEL PL NAME HOURS ITEM EV	PERSONNEL PLANT US NAME HOURS ITEM EV	PERSONNEL PLANT USED NAME HOURS ITEM HOURS EV

NARRATIVE OF DAYS OPERATIONS

Caretin	ud	12	, y (* 1	/	(Z!).X	r.l.	2 F	- tij	_/		
10 1143	1 <u> </u>	<u> </u>	3_	72		~9	/			,	
,					·						
						·					
		·			·		·				
		- · · · · · · · · · · · · · · · · · · ·									
											· .
		····						·	<u> </u>		- 234
		N	AAN-HO	our-√	VORK B	REAKD	OWN		*		
NAME	MOB.	<u> </u>	MOVING	DRILL	DRILL	PREV.	EQUIP.	LOST TIME			TOTAL
	-			076.	DEDROCK	MAIN I.	TAILORE	WEATHER	JOP ER.		A 7 7 7
	-										
-		1				<u> </u>	<u> </u>		1		<u> </u>
			WOF	RK FO	R TOMO	RROW	/				
Will	C214 -	tene	<u> </u>	Jef. 9 ₍	ن <u>ہ ا۔</u>	7-1	<u> p. 1/2-</u>	\			
· · · · · · · · · · · · · · · · · · ·								<i>'</i> 			
				· · · · · · · · · · · · · · · · · · ·		 -					
											
					PURCHA	SES					
lT	EM			AMOUN	T		<u> </u>	ITEM		-	MOUNT
		<u>_</u>					·				
									·		

NEW ENGLAND DIVISION CORPS OF ENGINEERS, U.S. ARMY WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO.								DATE	8-7	7-198	3)
Log no.		0	AIL	Y LOG	OF FI	EL	D EXPI	LORATION	<u> </u>		
PROJECT.	Fran	nK lin	· _	alls.	Dan)					
TEMPORA	RY ADDRESS		-								
	WHERE CAN					-					
	Clos									Mi	N
					DRILLIN						
HOLE	AREA	FOOT		FOOTAGE TODAY				MATERI	AL .	and the second	
FD-87-1	SONACTES	106.21	20.4	14.2	લકર હ	þ	Pury 1	inud for	Carant	iding d	Gija
armana e e e e e e e e e e e e e e e e e e	er e javes in e unit et e				5717	, Y	F. 50	and			station to the state of
						7					
- t - t - t - t			TE	ST PITS	OR AU	JGE	R BORI	NGS TODAY	/ .		
HOLE	AREA	DEPTH		MATERIA	AL.		HOLE	AREA	DEPTH	MAT	TERIAL
	reserve (s		ļ						ļļ		
			ļ	<u>·</u>					ļ		· · · · · · · · · · · · · · · · · · ·
			ļ					· · · · · · · · · · · · · · · · · · ·	1		
	·										
	PE	RSONN	IEL					PL	ANT US	E D	
	NA	ME			HOURS			ITEM		HOURS	BREAKDOWN Hours
Verr	4 Trim				8						
Leni	n Butle	ber .			8						
Vessi	e Cook	s			8						
Nite	7. 6cm	1-605			8				·		
			·								
	,										
							L				
											
								C	HIEF OF	IELD PA	RTY

NARRATIVE OF DAYS OPERATIONS

Six such	7	277	Jei		w	11. 1	1.Cepre	race to	dan.	16	te
Six sold aport sample were recovered today. The											
Ditte, fine to modern wood (very dense). Cole, one sample											
between don'the 111.1 and 112.6 encountered accounted law layer											
Duto 1/4" Thick of year prairie Clay.											
Apprehimaly To to be gallers of revolting fluid with not											
of White blinger 11/ and 11/ fit -											
Drilling was strong of about 244 pm because doubling											
Crew from not of Deand he wide											
Called Mr. Wong (pm) and he informed by that hothe rodo and loving will be arrivery Worden, To black to refer family to tolory											
The 45 Chang 18/20 the 6" of Chairs and to drive it to film poss											
but no faces depth 118 ft to proceeded crossing file making											
school to per it in the projet more											
MAN-HOUR WORK BREAKDOWN											
NAME	MOB.	DEMOB.	MOVING	DRILL	ł	PREV.	1	LOST TIME	i .	MISC.	TOTAL
				010.	BEDNOCK	MICH II	T AIGONE	WEATHER			
							 				
											-
WORK FOR TOMORROW											
Install 4" casing a continue soil singsling											
											
	-		· · · · · · · · · · · · · · · · · · ·							 	
			FI	FID	PURCHA	SES					
17	FM			AMOUN				ITEM	· · · · · · · · · · · · · · · · · · ·		MOUNT
ITEM				- miO O N	-						
Party Control of the		+									
					-						
									<u> </u>		
											_,
L. indiana											

FOUNDATIONS & MATERIALS BRANCH

LOG NO.								DATE	8-1	10-8	-7
		1	DAIL	Y LOG	OF FII	ELD EX	(PL	ORATIONS	S		
		_							_	TH 6 - 15	· ·
PROJECT.	Frank	< lia	t	~7/1S.	Day					·	·
	RY ADDRESS								· · ·		.
OCATION	WHERE CAN	BE RE	ACHE	D							
PHONE			TIME.			TEMPE	RATU	RE: M	AX	MI	N
NEATHER	Pain	\\ -		·							
	***		-		DRILLIN	IG TOD	AY		-		. e
HOLE	ADEA	FOO	TAGE	FOOTAGE				MATERI	A1	-,, <u>-</u>	
HOLE	AREA	FROM	10	TODAY			·	MAISKI	AL		e
FD-87-1				0							
San											a susception of
											8. A.V
	+ 4+ +		TE	ST PITS	OR AU	GER BO	ORIN	IGS TODAY	(
HOLE	AREA	DEPTH	1	MATERIA	AL.	HOL	Ε	AREA	DEPTH	MAT	ERIAL
						·					
				· · ·							

	6.7										· · · · · · · · · · · · · · · · · · ·
	PE	RSON	NEL					PL	ANT US	E D	
	NA	ME			HOURS			ITEM		HOURS	BREAKDOWN Hours
	rimm				5,5						
L /	butler										
1 1	1 c Coy	<u>,</u>						***			
											
					1						
											
	/	· · · · · · · · · · · · · · · · · · ·					-				
	/										

NED FORM 198

CHIEF OF FIELD PARTY

Will	id A	7 C.	7 <i>j</i> j	-/	ir s	انور د <i>ا</i>		± 16) الرياد () المرياد () المرياد () المرياد ()		
Gen Mic	<u> </u>	<u> </u>	~	<u> 1111 - </u>	1+1	7	<u> </u>	12 1/08	9.7	1/2	
Justel	120	40	C1 1	<u> 1-5-c</u>	25	11.	//	<u> </u>	ν-, / -		
at long	<u>ر</u> '	<u> </u>	<u> </u>	"	·	-4-1	7-	1 60	<u>' </u>		
11-19 401	7	1 () t	<u> </u>	100	(01	/	to le	<u> </u>	1/0,00	1	
and d	11. 1	ÍΦ.	<u> </u>	4	<u> </u>		<u>/_)/+-</u>	LUE	<u> 75</u>		
<u>Alir</u>			/			/					- 3
		- ,									. 11. 11
, , , , , , , , , , , , , , , , , , , ,			····								** ***********************************
				 	 					· · · · · · · · · · · · · · · · · · ·	
				·							a de la companya de
			<u></u>						,·		·
										·	
	· · · · · · · · · · · · · · · · · ·								41.		
		N	AAN-HC)UR-\	WORK B						·
NAME	MOB.	DEMOB.	MOVING	DRILL OVB.		PREV. MAINT.		LOST TIME (WEATHER)		MISC.	TOTAL
**************************************	-										
	-								 		
							<u> </u>				
			WOR	K FC	R TOMO	RROW	ı				
Car Fin		_/-		1		. ,	- 7	- De	WYS		
with Tax	W	W	no 1	1	Tall	14	11 (1/2)		20' I	<u>*</u>	
to keep		1	Eta		1 1	(101	1 I	an .	Lun	7	-
fallers in	ti	Sr ()			<u> </u>		0		()		
					PURCHA	SES					
IT	EM			AMOUN	T			ITEM		A	MOUNT
					_			• • • • • • • • • • • • • • • • • • • •			
					_						· .
					_				 		
											

FOUNDATIONS & MATERIALS BRANCH

LOG NO.					-			DATE	Aug	11,10	787
		 <u>_</u>	DAIL	Y LOG	OF FI	EL	D EXPL	ORATIONS			
PROJECT	Frankl	i~	Fall	is Da	m				-		
	RY ADDRESS									· ·	
LOCATION	WHERE CAN	BE RE	ACHE	D							
PHONE			TIME .	* .		T	EMPERAT	URE: M	Ax	N	N
WEATHER	Sunny	, wi	VYX	Wa	rm_		. 				
		•	. !				TODAY				see to the see
	4054	FOO	TAGE	FOOTAGE				MATERIA	A 1		
HOLE	AREA	FROM		TODAY				Amore .		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
FD87-1		120,4	130,5	10.1	Sil7	M	fin	e sand			
			-				· · · · · · · · · · · · · · · · · · ·				
			-		<u> </u>					· · · · · · · ·	
			TE	ST PITS	OR AL	JGE	R BOR	NGS TODAY	,		
HOLE	AREA	DEPT	4	MATERIA	AL		HOLE	AREA	DEPTH	MAT	TERIAL
]					
											· .
									<u> </u>		
					··						
	PE	RSONI	NEL					PL	ANT US	ED.	
	N/	ME			HOURS			ITEM		HOURS	BREAKDOWN Hours
Jen	y Trin	~~			8						
Lear	Butle. Sie Cooks	<u> </u>			8						
Jes	sie Cooks	(12:45	5-1:30	dentist)	8			·		<u> </u>	
Sani	ie Mc	Coy			8						
										ļ	
	*****							· · · · · · · · · · · · · · · · · · ·		_	
										<u></u>	
									HIEF OF I	FIELD PA	RTY

NED FORM 198

Distalled	4	" (a	Dir	(8 12	ن ح	Z					-
Sampled			F						Ç	rety	-	
I V										' //		
fini san-							12	Yall		- 1/	·	
after les	کا ہے ۔ محار		h 22	, to	2.1/2	u.K.	24th	1	A.A	-		
Gist Line	 ,											
								4.		-		
				<u> </u>				· · · · · · · · · · · · · · · · · · ·				
		· 			·		·				· · · · · · · · · · · · · · · · · · ·	<u> </u>
	1	N.	AN-HO		WORK BE							· .
NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV.	EQUIP. FAILURE	LOST T	IME ER)	SUPER.	MISC.	TOTAL
					-							
			WOR	k Fo	R TOMO	RROW	/					
Continue a	n I	اسلی ا	Je s	King								
								- 				
												
			FII	ELD	PURCHA	SES						
ITI	EM			AMOUN	T	<u></u>		ITEM			Δ	MOUNT
					_							,
												-,

FOUNDATIONS & MATERIALS BRANCH

1 00 MO							*	DATE	8-18	2-8-	7
LUG HU.			NA 11	V 100	ΛΕ E1	511	n EVDI	OPATION	2		
	_	_				ELI	J EXPL	ORATION:	<u> </u>		
PROJECT_	Frank	lin ,	Fa l	15)am				· · · · · · · · · · · · · · · · · · ·	·	
TEMPORA	RY ADDRESS		· · · ·						· · ·		
	WHERE CAN								<u> </u>		
										M!	N
MEATHER.	SUM	$f \rightarrow \omega$	CX Y	<u>m</u>			· · · · · · · ·		······································		
					DRILLI	NG	TODAY				·
HOLE	AREA			FOOTAGE TODAY				MATERI	AL .		
FD-87-1		FROM			S.IT		Ci.	20.1			
10-81-1		150,3	134.4	2,7	2///	/	I'INE.	sand			
					:						1.F 3:
		للنبل	·	<u> </u>							
		· · · · · · · · · · · · · · · · · · ·	TE	ST PITS	OR AL	JGE 1 r	 	NGS TODAY	/ .		
HOLE	AREA	DEPTH	4	MATERIA	AL.		HOLE	AREA	DEPTH	MAT	TERIAL
			-						 		
		ļ	-	o							
			╂					 	+		·
] [1		
	PE	RSONN	IEL					PL	ANT US	SED	•
	NA.	ME			HOURS			ITEM		HOURS	BREAKDOWN Hours
Jerry	Trimm	`			3						
				9	3						
Lanice	Butler e McCo	0\/			3				<u> </u>	ļ	
										ļ	
										ļ	
										 	
		 .		· · · · · · · · · · · · · · · · · · ·						1	
								C	HIEF OF	FIELD PA	RTY

NED FORM 198

Took	110	122.83	7 - 3	2 U .	J	, Cei e	r ho	. 24 I	<i>J</i>	shirten t	d. 1	
due 5	_/	$^{q}_{p}$ \rightarrow	ting K	· · ·	2011		Es.	1262	/	,		
Jenny &	V~	1.	<u> </u>	a.t.	10 AM	G	- Lo	ke	- July 200) - h		
the the	97 <i>2</i>		- 180	L 6	bot.	m	m be	5 July 2	2 9	3/2	1 AL	· · · · · · · · · · · · · · · · · · ·
Jeir Cut	<u>G.</u>		1.11		120 /1	/ 	<u> </u>	<u> </u>	<u> </u>	<u> </u>	, `v# =	1
Market and	/	(i	<u>,467 - {</u>	· /	<u> </u>	2 a 1	12/19	<u> </u>	<u> </u>	<u>6</u>		
I State of the	1		e. k	-21 y	<u> </u>	.	<u> </u>	<u> </u>		<u> </u>	12.1	
-ON IN	The	71.0		·								
				, <u> </u>	- 							
								·				. ;
				-								
												
						_						
				· · · · · · · · · · · · · · · · · · ·								
.		N	MAN-HO	OUR- V	WORK B	REAKE	OWN					
NAME	MOB.	DEMOB.	MOVING	DRILL	DRILL BEDROCK	PREV.		LOST TI		INSP. 8 SUPER.	MISC.	TOTAL
	-			040.	DEDROCK	MAIN II	AICORE	WEATTLE		JOI LIV.		
			<u> </u>				 -		-			
		<u> </u>							\top			
		-			R TOMO							
Will work	-2.	<u>/ 1</u>	epla	ceme	nt 0	luk	Ulu o	· Asi) / <u>S</u> _	er		~
answes.	<i>'</i>	(· · · · · · · · · · · · · · · · · · ·		
•												
							 					
						 						
			FI	ELD	PURCHA	SES						
ITE	E M			AMOUN				ITEM			A	MOUNT
					7						-	
					1							
					1						7	
									·			
I												

FOUNDATIONS & MATERIALS BRANCH

LOG NO					-			DATE	18-	138	-17
			DAIL	Y LOG	OF FII	ELD	EXPL	ORATIONS	 <u>S</u> .		
	Frank	- - 1: n	ſ-	=alls	no	7 N			_		a tang a sara
	,										
	WHERE CAN						<u></u>				
								URE: M			M.
PHONE	SIINX		TIME.	avm		IEM	PERAI	yre m	AX		
WEATHER.	34/1/	``}	<u>.v-</u>		DRILLIN						
HOLE	AREA	ļ	TAGE	FOOTAGE				MATERI	AL		n ikanan pangan
6 .7 .		FROM	10								· · · · · · · · · · · · · · · · · · ·
FD-87-1		-		0							i de militar el c
		-	<u>: </u>	5 6 <u>9</u>		·		1		•	Maria
											· · · · · · · · · · · · · · · · · · ·
e services experience			TE	ST PITS	OR AU	GER	BORII	NGS TODAY	,		
HOLE	AREA	DEPT	4	MATERIA	AL	1	IOLE	AREA	DEPTH	MAT	TERIAL
								· · · · · · · · · · · · · · · · · · ·			
	• •										
J. J. P.											
	PE	RSON	VEL.					PL	ANT US	E D	
	N.A	ME			HOURS			ITEM		HOURS	BREAKDOWN
1	Trimm	`			0						
	McCo				0						
	,,	}									
							<u> </u>				
· · ·						<u> </u>		······································		1	
<i>'</i> .						-					
						 	·-·-	<u></u>			
						L	·				l
											· · · · · · · · · · · · · · · · · · ·
								C	HIEF OF	FIELD PA	RTY

NED FORM 198

Dulle	^	1 2-A	7	(<i>U</i>	J. L	1 	· /	L - Biz	ZZ _{Úk}		
returne	/	<u> </u>	<i>></i> 7' €	کریا	Jest 1	· N	se f	/ \ J.	COOK		
J. 1991	<u> </u>	Me	1 + L	<u></u>	215.11	,	60 <u>1) 11</u>	that K	.!		
I De K	<u>, 1, 1, 1</u>		<u> </u>	<u> </u>		<u> </u>	1/2 Oc	to d	EMON	ر لمه آجو	
					·					· · ·	
	·	·	· · -								
									 -		177
	<u></u>									• • • • • • • • • • • • • • • • • • • •	
								· · · · · · · · · · · · · · · · · · ·			. 4 .
									·····		
										n	
		. N	MAN-HO		VORK BE			г	1		
NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV.	l .	LOST TIME	1	MISC.	TOTAL
	_								-		
	-									ļ .	
									· ·		2 47 1 1
	-								-	-	
			L	L	<u></u>		J	<u> </u>	<u> </u>	<u> </u>	1
			WOR	K FC	R TOMO	RROW	1				
Sharld C	mti	nu	- On.	1	201 000	der 5	Ü	rent 3	cenve	. I	
Should a	Lely.	e.	200	ires	V		/	/			
								~ 			
											
											
			FII	ELD	PURCHA	SES					
1:	TEM			AMOUN	7			ITEM			MOUNT
									<u> </u>		
	 				_						

FOUNDATIONS & MATERIALS BRANCH

LOG NO.								DATE	aug	14,19	787
rod wo.		r	NA 11	V 100	ΛΕ Ε1 5	5 I D	EADI				
		_				בנט	EAPL	ORATION	<u> </u>		
PROJECT.	Frankli	`A -	9115	Da	m				<u> </u>	***	·
	RY ADDRESS					···					es la
	WHERE CAN									- · · · · · · · · · · · · · · · · · · ·	
WEATHER	Foggy	an.	Sui	~~}	+ way	<u>m</u> ,	pm				
					DRILLIN	IG '	TODAY				
HOLE	AREA	F001		FOOTAGE				MATER	AL		
		FROM	"	11,3°				- 1			
FD-87-1	And the second second	131,5	142.8	6111	SILT	<u>/ S</u> :	ind T	o Sandy	1 grav	<u>ie l</u>	
		+	<u> </u>		ļ						ts na
						· · · · · ·				,	
			TE	ST PITS	OR AU	GEF	BOR	NGS TODA	Y :		11.4
HOLE	AREA	DEPTH		MATERIA	AL		HOLE	AREA	DEPTH	MAT	ERIAL
										· · · · · ·	
	PE	RSONN	IEL					PL	ANT US	ED .	
	NA	ME			HOURS			ITEM		HOURS	BREAKDOWN Hours
Jerr	y Trimi	n_			8						
Isr	y Trimi eal / ce Mcc	411is	Un		8						
Jani	ce Mc	Cay			8						
						Ĺ				ļ	
									· · · · · · · · · · · · · · · · · · ·		
								. <u></u>			
,					-						
									HIEF OF F	IELD PAI	RTY

May	1	1 . 7.	- Loty		-0	*	· //	A	A a	111.					
16 work	helpers. Her verticed by 1steel they.														
Asharis.		<u> </u>	11		will	1/11	12/69	1 - 50 1 1 TO 1	g. Can ki	,					
Can STANDA	1	2 45 Z X	-0	- 11 in	alisa		-21	the m	so l	•					
1-24.	1/1/2	<u></u>	<u> </u>		1		1 (1. 1. 2.	1						
Q 2 1 2	in the second se	F1 - 2 - 1		WN	hirs	wa	Ch 1	just !	he						
helper.	ĺ			<u></u>											
									· .	:					
<u> </u>								· · · · · · · · · · · · · · · · · · ·							
		•	44 NI 175	VIIC 11	NODE E	>= A L/>									
	MAN-HOUR WORK BREAKDOWN DRILL DRILL PREV. EQUIP. LOST TIME INSP. 8 MISC TOTAL														
NAME	DRILL DRILL PREV. EQUIP. LOST TIME INSP. 8														
OVB. BEDROCK MAINT. FAILURE (WEATHER) SUPER. MISS.															
										:					
***	· · · · · · · · · · · · · · · · · · ·				R TOMO										
Centenue	- 00°C	<u>リ</u>	sim	<u>pli</u>	Jy X	YCIM	rea	1 10	ch d	······	·				
loegin c	1/10				/	V									
(.					·				-						
															
			FII	ELD	PURCHA	SES									
1	FIELD PURCHASES ITEM AMOUNT ITEM AMOUNT														
					+ -										
											w				
					+ -						,				
					1			-,,	·						
					1	-	······································		···						
L															

FOUNDATIONS & MATERIALS BRANCH

LOG NO.					•		DATE	<u>Qui</u>	17,1	981
		<u> 1</u>	DAIL	Y LOG	OF FIEL	D EXP	LORATIONS	ι		
PROJECT_	Frank	li~	F	1115	Dam		· · · · · · · · · · · · · · · · · · ·		···	
TEMPORAL	RY ADDRESS					·				·
	WHERE CAN						· · · · · · · · · · · · · · · · · · ·			·······
PHONE	·		TIME .		T	EMPERAT	TURE: M.	Ax	MI	N
WEATHER	Sunn	/	Ve	ry h	01		TURE: M			· · · · · · · · · · · · · · · · · · ·
		,			DRILLING				- 1 - 200-1	
HOLE	AREA			FOOTAGE			MATERI	A L		
11022		FROM		TODAY	<u> </u>			· ·		
FD-87-1		141.5	152,	10,6	Sand	4	Sandy gr	ravel		
i i n = n a sgr i n a i n n		ļ		1 1					* * * * * *	
			TE	ST PITS	OR AUG	ER BOR	INGS TODAY	,		
HOLE	AREA	DEPT	1	MATERIA	AL	HOLE	AREA	DEPTH	MAT	ERIAL
	u .									
111						L				·
								<u> </u>		
	PE	RSON	VEL			¯.	PL	ANT US	ΕD	
	NA	ME			HOURS		ITEM		HOURS	BREAKDOWN Hours
1-88	y Trimp	^			8					
	al A1				8	-				
	ie Coo				8			-		
Jani					8					
75/11	/									
		· · · · · · · · · · · · · · · · · · ·								
									1	
							<u> </u>			
L ,			····		. لحند				1	L

CHIEF OF FIELD PARTY

Contonu	eD.	والإس) (X	é	XI MY	210	<u> </u>	Single	J- Z	5	
Th J-28	(6	<u>70 - 7</u> 10 77	1 10	<u>~ . l)</u> ;	1	sel	<u>al</u> +	152	1/2	<u> </u>	_
to hole		IN.	J O	ZZ M	15. 1	L ~	· Joe	4 rees	118 T	/ -	
America	av.							1 1			
										· ·	
			·								······································
											
										-	
		N	AAN-HO		VORK BI			 			
NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.		LOST TIME		MISC.	TOTAL
				,							-
			-								
								,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
										<u> </u>	
					R TOMO				· · · · · · · · · · · · · · · · · · ·		
Core no	12.K	40	·/_	100	en jour	Tean			, <u>.</u>		
				<i>l</i>	<u> </u>					.	
			<u> </u>	- ,					·		
			FI	ELD	PURCHA	SES					
1	TEM		-	AMOUN	7			ITEM		<i>A</i>	MOUNT
					-				·		

FOUNDATIONS & MATERIALS BRANCH

LOG NO.							DATE	Aug	18,79	Y /
FAG MAY			DAII	YIOG	OF FIF	LD EXPI	ORATION			
	- 1.11	-						_		
	Frankl		9/13	(Jam	·					
	RY ADDRESS		ACHE							And the second
	WHERE CAN					TEMPERAT	URF: N	IAY	M	N
	HOT, S									
					DRILLING	TODAY			-1	
		FOO	TAGE	FOOTAGE			 _			
HOLE	AREA	FROM	10	TODAY			MAIER	IAL		
FD-87-1		152.1	160,2	8.1	rocl	<u> </u>	· · · · · · · · · · · · · · · · · · ·			
		1				· · · · · · · · · · · · · · · · · · ·				
1	i i i erbet Sandi									
			TE	ST PITS	OR AUG	ER BORII	NGS TODA	Y .		
HOLE	AREA	DEPT	н	MATERIA	AL.	HOLE	AREA	DEPTH	MAT	TERIAL
										- · · · · · · · · · · · · · · · · · · ·
	PE	RSONI	NEL				PL	ANT US		
		RSONI	NEL		HOURS		PL	ANT US		BREAKDOWN HOURS
len	NA		NEL		HOURS			ANT US	SED	BREAKDOWN
Jen Jessi	y Trimm	ME			8			ANT US	SED	BREAKDOWN
Jen, Jessi Isro	y Trimm	ME			8			ANT US	SED	BREAKDOWN
Jerry Jessi Isre	y Trimm	ME			8			ANT US	SED	BREAKDOWN
Jerry Jessi Tsre Jani	NA	ME			8			ANT US	SED	BREAKDOWN
Jen Jessi Isre Jani	y Trimm	ME			8			ANT US	SED	BREAKDOWN
Jen Jessi Isra Jan	y Trimm	ME			8			ANT US	SED	BREAKDOWN

NED DEC 63 198

CHIEF OF FIELD PARTY

Gold No	k.	T	oh	ti,	me Z	; }	Clea	er Still	neu	کرج	
the lan	~ 4	1	lough	2 le	s'i	lur	C (. 1	Och E	1 90	î .	
louis 1	المراجع المراجع	Lin	0/1	2_1	e selfer	L	1-11	nuch	- Osta	2-1	
Steward L	der-	<u>e (</u>	CINE	<u> 1</u>	16.	VI-	<u> </u>	2.1-111	157.	1	·
However 1550	lon	1	Kole	at	158	3'	Sá.	sedon	recl	ر د	
dille sta	te	I no	rch C	ering	at	<i>15</i> 3	12 x	soball	lite	۵	
bulla at to	p	1000	h (15	2,1),		· / /				
Ment	Tel "	' 	rta	(la)	tror_	4_	Lay	<u>a Sta</u>	2.2	<	
15016	the .	+ in	<u> </u>	- , , ,	1.6 1.00	. (Wha		4 00	<u> </u>	F
Was smel;	£ = L	er l.l.	V a	TH	209	SU	val	h flo	<u>v 2</u>	all	L
10 1 11 16 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			1 - O		; 		ralls	1 Pour	10	6/10	
down Col	Ŷ	1266	<u> </u>	OF K	<u> </u>	Mars	<u> </u>	Africa.	1/2	14 J	
			/							/	
<u></u>											
		1	AAN-HC)H P - A	WORK BI	SEVKL	OWN				
	Τ	I		Dell		PREV.		LOST TIME	INSP 8		
NAME	MOB.	DEMOB.	MOVING		t	1	1	(WEATHER)			TOTAL
								·			
			, 	K FO	R TOMO	RROW	V				·
Continue	115	1.11	1.9	/ /	(Og	Ter-	ò				
ford to g	2/	 	<u> </u>	1/2.1	1 pu	jul.	pri	rective	Cersi	ng	
for segro	<u> </u>	krone	<u> </u>	lm-	A park	sycl y	-	on Tony	Fu	Lader	.,)
1 / /			· · · · · · · · · · · · · · · · · · ·			 -	<i>V</i>	/			
		·									
			E* 11	E1 U	PURCHA	CEC					
						3E3		1		T.	
IT!	E.M			MOUN	4 -			ITEM		A	MOUNT
	-										
									·		
				·	J L_	·					ب بسیاب مسا

FOUNDATIONS & MATERIALS BRANCH

LOG NO.							DATE	aug	19,1	987
200			7411	V 106	OF FIR	IN EXE	PLORATION			
		-							1.8.4.	
PROJECT_	Frankl	i^_	10	7/15	J)	M			<u> </u>	
TEMPORAL	RY ADDRESS									
LOCATION	WHERE CAN									TO THE STATE OF TH
PHONE							ATURE: N	IAX	MI	N
WEATHER	Not,	SUM	My.							· · · · · · · · · · · · · · · · · · ·
					DRILLIN	G TODA	Y			
HOLE	AREA	FOO		FOOTAGE			MATER	IAL		
		FROM	10	TODAY		J:	and and this are a	. At	1	· · · · · · · · · · · · · · · · · · ·
FD-87-1	to a set of the set of the set	-		-	pier	mell	i Min	(a) Aa	IT.or	
	1 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		<u> </u>		- 0	·	<u> </u>			. is vi
		1			<u> </u>		·	·	· · · · · · · · · · · · · · · · · · ·	
			TE	ST PITS	OR AU	GER BOF	RINGS TODA	Υ.		
HOLE	AREA	DEPTH		MATERIA	AL	HOLE	AREA	DEPTH	MAT	TERIAL
					·				· · · · · ·	
				·						
			<u> </u>							
									, , , , , , , , , , , , , , , , , , ,	
	PE	RSON	1EL				PL	.ANT US	SED	
	NA	ME			HOURS		ITEM		HOURS	BREAKDOWN Hours
Jerr	y Trim	m			8.5					
					8.5					
Isrea	sie Co	li Son			8,5					
	ce M.	رده	/		8.5					
		/								
		11111								
								CHIEF OF	FIELD PA	RTY
							,	01		

A		, -			12 01		LICAT						
1 4	notalle		<u> </u>	10	<u> </u>	1/100 -	. Fer	In	FO	-81	7-1		
1	Get. 1		121-1	<u> </u>	<u> (C. , , , , , , , , , , , , , , , , , , ,</u>	W 4		, Dien		9	<u>o'.</u>		
14-	ed too	7	Fred March	<u> </u>	728	<u> </u>	in 1	Je.	- 1		391		
G	ullet	<u>Č</u>	AHN	· ·	11/2	1	<u> </u>	1.316		PN	v p		
1	merce 6		Mich	1 (3. 1. 2 x y		1.5 V 1.75	10-C	/	× -		
				/									
										<u></u>		-	
	·										-,·		
					·								
											·		
						·							<u>:</u>
			N	MAN-HO	DUR- N	WORK BE	REAKE	OWN					
	NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.				INSP. 8 SUPER.	MISC.	TOTAL
												1 W	
												r rri	
								8 - p was _					
				WOF	K FC	R TOMO	RROW	/					
an	Linu	(s	ne	mits			Tel !	o thou					
		/_		·				···					
													,
•				FI	ELD	PURCHA	SES						
	ITI	E M			AMOUN				ITEM			Δ	MOUNT
E. A. Kasa	Mr. 1.31/2	177	7 . 40	4		7 -							
1/1	diller)	, , , 1		<u>``</u>		1							
	1 01111(1)					1							
		<u> </u>										-	
						1			,				
1				i		1 1							

FOUNDATIONS & MATERIALS BRANCH

LOG NO.								DATE	Augā	20,1	987
LUG HU.			DAIL	Y LOG	OF FI	EL	D EXPL	ORATION)		
		_							-		
	Franklin							·		·	
TEMPORA	RY ADDRESS		·	· ·							
	WHERE CAN			-							· · · · · · · · · · · · · · · · · · ·
						T	EMPERAT	URE: N	AX	MI	N
WEATHER	Sanny	<u>, </u>	a r	m				·			
					DRILLIN	٧G	TODAY				
HOLE	AREA	FOOT	TAGE	FOOTAGE				MATER	A	. 5 455	
NOLE	NUEN	FROM	10	TODAY		.		ma i En		5 S 31 S	
						2.5		· · · · · · · · · · · · · · · · · · ·			
ing a proper section of the contract of the co	e a como de la como de La como de la como de La como de la como de							· · ·	· · · · · · · · · · · · · · · · · · ·		Parks
i in Albandaria										·····	* 4.7 *
			TF	ST PITS	OR AL	!GF	R BORII	NGS TODA	,		
HOLE	AREA	DEPTH		MATERIA			HOLE	AREA	DEPTH	MAT	ERIAL
						-		· · · · · · · · · · · · · · · · · · ·			
	<u></u>		 		· · · · · · · · · · · · · · · · · · ·				1 1		
		-	 								
			 						1		
							L		 		
	PE	RSONN	IEL					PL	ANT US	ED	
	NA	ME	•		HOURS			ITEM	· · · · · · · · · · · · · · · · · · ·	HOURS	BREAKDOWN Hours
101	ry Trin	~ ~ (254	rs cc.te)	8						
1000	in Cust	-		117/10 /	8						
10,00	ie Cook al Alli ce Mac	- 		······································	8		<u> </u>				
1210	(e /\ (SO~			\$						
rini	CC / V/Z S	7									
										<u> </u>	
	· · · · · · · · · · · · · · · · · · ·										
	<u> </u>	.,								 	
					أنسل		L			<u> </u>	<u> </u>
								_			
									HIEF OF F	IELD PA	RTY

NED FORM 198

Complete	, [in	J. 12.	1.6	(3°}-	2	Na	igv-el	ار) الرا			
Sola 1	191	<u>ILI</u> V	1	12/	<u></u>	90	(= X(<u> </u>	<u>///9</u>		1	
Auto x		1: 7		10/1	, the		0121	<u>~</u>		<u>? 2</u>	<u></u>	
		<u> </u>	- /- S	1	<u>*************************************</u>	<u>, </u>		<u> </u>				
Visit		Ź-,	1/1	The	Dog 6	4.	Ten	5	W	v-0		
1 tule	TI	/L	0 / 3	11/2	Ā		to port	1/200	/ _31	let.		
Ja Zich	<u>ر</u>		/	/								
1					,					 .		-
					· · · · · · · · · · · · · · · · · · ·							
		A	AAN-HO)UR- 7	WORK BE	RFAKE	OWN					
	ļ <u>.</u>			DBILL	· · · · · · · · · · · · · · · · · · ·		EQUIP.	LOST	TIME	INSP. 8	wec.	TOTAL
NAME	мов.	DEMOB.	MOVING	OVB.	BEDROCK	MAINT.	FAILURE	(WEAT	HER)	SUPER.	MISC.	TOTAL
			ļ			-						
							 	 				<u> </u>
			WOF	≀K FC	R TOMO	RROW	٧					
Romere DE	. X	Carr	<u>~</u>	<u> </u>	me	te	1200	nete				
Comerce DE	v	V			<i>U</i>		6					
										·		
												
										<u> </u>		
			FI	ELD	PURCHA	SES						
ITE	EM			AMOUN	7			ITEM			, and a	MOUNT
											T	
					_							
<u></u>												,
												<u></u>

FOUNDATIONS & MATERIALS BRANCH

								8-8	21-8	7
LOG NO.			,				DATE		- 1 (1	
		. <u>I</u>	DAIL	Y LOG	OF FIE	LD EXPL	ORATION	<u>s</u>		10 Jan 10 10 10 10 10 10 10 10 10 10 10 10 10
PROJECT.	Frank	lin	Fa	115 1)am					
	RY ADDRESS							·		
OCATION	WHERE CAL	N BE RE	ACHE	:D			· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·		
	· · · · · · · · · · · · · · · · · · ·		TIME.			TEMPERAT	URE: N	1AX	MI	N
VEATHER	Cloud	}								•
		/			DRILLIN	G TODAY			20 2 - 0.00	
HOLE	AREA	FOO	TAGE	FOOTAGE		· · · · · · · · · · · · · · · · · · ·	MATER	IAL		
		FROM	10	TODAY						
FD-87-1						·				
							· · · · · · · · · · · · · · · · · · ·			
			<u> </u>					·	·	··
			TE	ST PITS	OR AU	GER BORII	NGS TODA	Υ		
HOLE	AREA	DEPT	1	MATERIA	\L	HOLE	AREA	DEPTH	MAT	ERIAL
										·
,			1							
		ļ	-	· · ·						
							·			• • • • • •
a a	PE	RSON	VEL		en e		PL	ANT US	SED	x +
	N.	AME			HOURS		ITEM		HOURS	BREAKDOWN HOURS
JIT	rimm				8		· ·			
	ooks			-	8					
	A11:50m				8					
<u> </u>	McCoy				8					
	/						·			
						: -				
										:
								CHIEF OF	FIELD PA	RTY

NED FORM 198

Contin	w	<u>, 1</u>	2//Y-01	11/2×	<u> (</u>	10 E	- <u>X</u>	CHA	No.		
and loo	ul	1,21		21	21120	/	,	224 75	er flet er	,	
Stallow		100	<u>, 0</u>	· 	<u>) Educe</u>	16.1	1/	16p -	<u>/ </u>		
VBC 2	<u>u. 2 k</u>	10 56	9 	(1)	· +])	ak	terry	为一			
Until for	21.1	<u> </u>	₹. i.	<u>./</u>	1	1.10	<u></u>	<u> </u>	rol		
gercent	<u> 18</u>	<u></u>	101 ji	73	1-12)	177		<u> </u>	or Ask	7.37	(
A CA	ر پر جست	12/20	e kja jesa V =	.6		16	ry.v		····		
J. Pulled	χ	<u> </u>	JUE.	χ	· (=t -,	2. 11. 1. 1. -at-1h	<u>, (/ · · · </u>	<u> </u>	- f		
50±1/	La 1	Er. Azi	<i>, e</i> ·	, t., 20	7	<u> </u>	<u> 150, 7</u> 7	<u></u>	man and a second		
70-11											
<u> </u>											
									,		
									,		
											
		N	AAN-HO	DUR- √	WORK BE	REAKE	OWN				
NAME	MAR	DEMOR	MOVING	DRILL	DRILL	PREV.		LOST TIME			TOTAL
NAME	M OB.	DEMOD.		OVB.	BEDROCK	MAINT.	FAILURE	(WEATHER	SUPER.		
	-										
								 	 	ļ	1
	<u> </u>							·	ļ		·
	-	,									
	 								 	ļ	
		<u> </u>		l	L	l	J				
			WOF	RK FC	R TOMO	RROM	٧				
Read Deens		4	(3A)	R	m X		=1/C 7\	neld	1/20		
1	<u></u>		10.00	70	1	<u></u>	<u> </u>	1			
		V							•		
								1. 1			
			FI	ELD	PURCHA	SES					
171	EM			AMOUN	7			ITEM		Δ	MOUNT
	·										
					_						

FOUNDATIONS & MATERIALS BRANCH

100 10								DATE	8=	24-	8 /
LUE RU.						.					
		_						ORATION	_		
PROJECT.	Frank		F	-9115	Da	<u> </u>		·		· · · · ·	
TEMPORA	RY ADDRESS		-	,					· · · · · · · · · · · · · · · · · · ·		
LOCATION	WHERE CAN	BE RE	ACHE	D				· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·		
						TE	MPERAT	URE: M	AX	MI	N
WEATHER	Synn	/ 	COO	· ·					·		
					DRILLI	NG	TODAY				
HOLE	AREA	FOOT		FOOTAGE				MATERI	AL .		
		FROM	TO	TODAY			*************************************	Ring 1		······································	
FD-87-1		-		0							
		-	-								
<u> </u>										. ;	
·			TE	ST PITS	OR AL	UGE	R BORII	NGS TODAY	/		
HOLE	AREA	DEPTH		MATERIA	AL] .[HOLE	AREA	DEPTH	MAT	TERIAL
] [
]					
			<u> </u>]			ļ		
					, , , , , , , , , , , , , , , , , , ,	JL					
	PE	RSONN	EL					PL	ANT US	SED	
	NA	ME			HOURS			ITEM		HOURS	BREAKDOWN Hours
7.7	rimm				8						
+	Allison	<u> </u>		,.	8						
.) (COUKS				8						
J. M	c Coy				8					ļ	
	/	<u> </u>		~						ļ	
										<u> </u>	
	· · · · · · · · · · · · · · · · · · ·										
	·· · · · · · · · · · · · · · · · · · ·									<u></u>	
									HIEF OF	FIELD PA	RTY

Fene	n. hed	/ f.	= D - ¿	>7-	1.	Pir	z k , w	(y)	1,	ir A		
just of	; ; / /	.) jus	- , <i>j</i>	, 		/-/-			U,	<u>ر () -</u>	<u>) </u>	
12/1/1/h/	U Va		V 23/	<u> </u>	skal V	ic.	yr-17\)		2 1	E. 1	}	
	· · · · · · · · · · · · · · · · · · ·	1	1 1/2 () (<u> </u>	<u> </u>	<i>6</i> /() ~				* + +
												
											· ·	
				,			_			• .		
		 										
		····		4 A T					·-			
	···			 _				-,, ,-				
		N	AN-HO	OUR-	VORK B	REAKD	OWN					
NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.		LOST (WE AT	TIME HER)	INSP. 8 SUPER.	MISC.	TOTAL
												1 1 1 1 1
												1
									 		·	
												<u> </u>
			WOR	K EC	R TOMO	DBOM	J					
more to	/i\ a	1 . a [2]			7101410					·		
7 20 0										· · · · · ·		·
												
	·····											
			FI	ELD	PURCHA	SES						
	ITEM			AMOUN	7			ITEM				MOUNT
					_						-	
												
										·		

FOUNDATIONS & MATERIALS BRANCH

LOG NO.							DATE	8-2	25-	27
		. 1	DAIL	Y LOG	OF FIE	LD EXP	LORATION	S		
		_								
PROJECT	Fran	<u>Kli</u>	<u>~ </u>	9115.	Dolo	s				· · · · · · · · · · · · · · · · · · ·
TEMPORA	RY ADDRESS									
LOCATION	N WHERE CAN	BE RE	ACHE	:D						
						TEMPERAT	'URE: N	IAX	MI	N
WEATHER	Synr	7	<u>C</u> 0	<u>U 1</u>			·			· ·
		,			DRILLIN	G TODAY	•			
HOLE	AREA	F00	TAGE	FOOTAGE			MATER	IAI		
HOLE	ANEA	FROM	10	TODAY			MAIL			
<u></u>				<u> </u>						
- 11 / 1						·				er a s
			- 1	<u> </u>						
\$			TE	ST PITS	OR AU	SER BORI	NGS TODA	Υ		
HOLE	AREA	DEPT	1	MATERIA	AL.	HOLE	AREA	DEPTH	MAT	TERIAL
			1							
	PE	RSON	VEL.	, -			PL	ANT US	E D	
	N/	ME			HOURS	·	ITEM		HOURS	BREAKDOWN HOURS
	Trimm	_		eni. Debuge di dic	8			 	 	
1.	CONKS		······································							
T	Cooks Allison Lagron				8					
F	Lagras				8				 	
1 1/	10 00				8		······································			
 ` ' ' '										
	· · · · · · · · · · · · · · · · · · ·					-	· · · · · · · · · · · · · · · · · · ·		 	
L		······································		T		L	······································		1	L

NED FORM 198

CHIEF OF FIELD PARTY

MAN-HOUR WORK BREAKDOWN NAME MOB. DEMOB. MOVING DRILL DRILL PREV. EQUIP. LOST TIME INSP. 8 MISC. TOTAL MISC. TOTAL
MAN-HOUR WORK BREAKDOWN NAME MOB. DEMOB. MOVING OVB. BEDROCK MAINT, FAILURE (WEATHER) SUPER. MISC. TOTAL
MAN-HOUR WORK BREAKDOWN NAME MOB DEMOB MOVING DRILL DRILL OVB BEDROCK MAINT, FAILURE (WEATHER) SUPER. MISC. TOTAL
MAN-HOUR WORK BREAKDOWN NAME MOB DEMOB MOVING DRILL DRILL OVB BEDROCK MAINT, FAILURE (WEATHER) SUPER. MISC. TOTAL
MAN-HOUR WORK BREAKDOWN NAME MOB DEMOB MOVING DRILL OVB BEDROCK MAINT FAILURE (WEATHER) SUPER. MISC. TOTAL
MAN-HOUR WORK BREAKDOWN NAME MOB DEMOB MOVING DRILL OVB BEDROCK MAINT FAILURE (WEATHER) SUPER. MISC. TOTAL
MAN-HOUR WORK BREAKDOWN NAME MOB DEMOB. MOVING OVB. BEDROCK MAINT. FAILURE (WEATHER) SUPER. MISC. TOTAL
MAN-HOUR WORK BREAKDOWN NAME MOB DEMOB. MOVING OVB. BEDROCK MAINT, FAILURE (WEATHER) SUPER. MISC. TOTAL
NAME MOB. DEMOB. MOVING DRILL DRILL PREV. EQUIP. LOST TIME INSP. 8 SUPER. MISC. TOTAL
NAME MOB. DEMOB. MOVING DRILL DRILL PREV. EQUIP. LOST TIME INSP. 8 SUPER. MISC. TOTAL
NAME MOB. DEMOB. MOVING DRILL DRILL PREV. EQUIP. LOST TIME INSP. 8 SUPER. MISC. TOTAL
NAME MOB. DEMOB. MOVING DRILL DRILL PREV. EQUIP. LOST TIME INSP. 8 SUPER. MISC. TOTAL
NAME MOB. DEMOB. MOVING OVB. BEDROCK MAINT. FAILURE (WEATHER) SUPER. MISC. TOTAL
WORK FOR TOMORROW
Begin installing NEX
they whaten
FIELD PURCHASES
ITEM AMOUNT ITEM AMOUNT

FOUNDATIONS & MATERIALS BRANCH

LOG NO.							DATE	2-2	6-8	7
			DAIL	Y LOG	OF FIE	LD EXPL	ORATION	S		
		_			-					•
PROJECT_	Fran			F9115	Dar		<u> </u>			
TEMPORA	RY ADDRESS	·								
OCATION	WHERE CAN	BERE	ACHE	D	-					
									N	N
NEATHER	Synn	y . , c	00							· · · · · · · · · · · · · · · · · · ·
	- Particular				DRILLIN	3 TODAY				,= · · · · · ·
11015	4054	F00	TAGE	FOOTAGE						· · · · · · · · · · · · · · · · · · ·
HOLE	AREA	FROM	TO	TODAY			MATER	IAL	1	a care and a second
and the first of the second				er er er er er er er er				· · ·		on a superior of the same
						1			***	
			TE	ST PITS	OR AUG	ER BORI	IGS TODA	Y		
HOLE	AREA	DEPTH	1	MATERIA	NL .	HOLE	AREA	DEPTH	MA.	TERIAL
			-							
							·			
				·						
	PE	RSONN	IEL	.* . * .	•		PL	ANT US	ED.	
	N/	AME			HOURS		ITEM		HOURS	BREAKDOWN Hours
JT	rimm				8					
I. A	lli's on				8					
E	1-9910r	ne		4 - 1	8					
1). (MC CCX				8					
				· <u> </u>						
Yes.										
										·
	<u></u>	· · · ·					· · ·			
									i .	

NED DEC 63 198

CHIEF OF FIELD PARTY

Benin		Wzsa	ÎG	ID.	EX.	Des	1.	1/2 1/2	10		
myt (w	1 En :) — <u> </u>	/ B	711	7. W e.		ja	IDE	<u>(an</u>	1	
Mar mad	/	-/	· /·		ich.	<u> </u>	<u> </u>	177 B	- 1		
Thurk y	1	A	1,	1992.	1.001	<u></u>		(4 x 2)	'42 B		7
(/			7/			1			-	· · · · · ·	.,
ALTO O	Lose	<u>Sen</u> Dril	//	0 M2	<u>, 01</u>	eduer Composition	e de la .	den les	<u>(u</u>	h	
NED Lab		Drie	le	10		ملاك	<u>'</u>	19.	11/1/10		1.4
/(2.E-11/1-170-12-C)										- 7 6.2	
										* *	
										- :-	38 H. (\$4.)
						·	 	· · · · · · · · · · · · · · · · · · ·	<u> </u>		
		•		\	NODY 5)	OMA			.i.,	
	т	N	IAN-HO		VORK BE	PREV.		LOST TIME	INCD 6	r	N 1 1
NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK			(WEATHER)		MISC.	TOTAL
										4. 4.	
	ļ								ļ		
	ļ									* 1.1	
					· · · · · · · · · · · · · · · · · · ·				<u> </u>		
			WOR	RK FC	R TOMO	RROW	J		•		
							·	· · · · · · · · · · · · · · · · · · ·			
			-	-							
					PURCHA	SES		·			
IT	EM			AMOUN	T			ITEM		Δ	MOUNT
					_	 -					
											
				·			· · · · · · · · · · · · · · · · · · ·				
							· · · · · · · · · · · · · · · · · · ·	···			
					_						

APPENDIX H

Weekly Safety Meeting Reports

STONE & WEBSTER ENGINEERING CORPORATION WEEKLY SAFETY MEETING LOG CORPS OF ENGINEERS, NEW ENGLAND DIVISION

TO:	Safety Office,	, NED	DATE HELD	: 1-29-81
FROM:	Field Engineer	or Drilling Supervisor	TIME:	11:30
THRU:	Project Manage	er	PERSONNEL	PRESENT: McCoy Trimm
		, was held this date -85-D-0012 Delivery Order <u>(700</u>		Jose Cooks Luther Lewis
1.	Individual Proprevention of Safe Lifting To Emergency Communication, Fire Prevention Sanitation, Fire Prevention Sanitation, Fire Prevention Sanitation, Fire Prevention Sanitation, Fire Prevention Hazar Staging Ladder Hand Tools — Portable Power Woodworking Manual Equipment Main Hoisting Equip	Techniques - munications - mun	Canber - Casa call A Slectrical,	Look Mem hoyes
2.	Exposure: Total on site Personnel	job hours: 8 / day	Jupel VISOI	
	SIGNATURE:	Project Manager		_

3. FORWARDED TO: NED, Waltham, ,MA

J.O. No. 15611.

STONE & WEBSTER ENGINEERING CORPORATION WEEKLY SAFETY MEETING LOG CORPS OF ENGINEERS, NEW ENGLAND DIVISION

	<u></u>	OR D OF ENGEREERS, INDA	ENGERIED DIVIDIO	
TO:	Safety Office,	NED	DATE HELD	: <u>Aug</u> 5,1987
FROM:	Field Engineer	or Drilling Superviso	r TIME:	7:25am
THRU:	Project Manage	r	PERSONNEL	PRESENT: J. McCoy Jerry Trianm
		was held this date 85-D-0012 Delivery Ord		Leon Putler
1.	Individual Proprevention of Safe Lifting Temergency Communication, Fire Prevention Sanitation, Fire Prevention Sanitation, Fire Prevention Sanitation, Fire Prevention Hazar Staging Ladder Hand Tools - Portable Power Woodworking Management Main Hoisting Equip Ropes, Hooks, Electrical Group Lockouts for Such Welding - NA Excavations - Loose Rock and Explosives - Water Safety Others -	rechniques - munications - m - mrst Aid - mds - Trash, hose, nail rs, Concrete Forms - M rechinery - ment - Cables ok Chains and Slings - munding, Temporary Wiri Safe Clearance Procedur MA i Step Slopes - Very	s in lumber - ang -NA es - Electrical,	
	PREPARED BY:	Field Engineer or Dril	ling Supervisor	
2.	Exposure: Total on site Personnel	job hours: 8		
	SIGNATURE:	Project Manager	ngar_	_

3. FORWARDED TO: NED, Waltham, MA

Page	3	of	3

STONE & WEBSTER ENGINEERING CORPORATION WEEKLY SAFETY MEETING LOG CORPS OF ENGINEERS, NEW ENGLAND DIVISION

TO:	Safety Office, NED	DATE HELD:	aug //, 1987
FROM:	Field Engineer or Drilling Supervisor	TIME:	11:30
THRU:	Project Manager		PRESENT: Very Trimm Vessie Cooks Freal Allison
-	Safety meeting was held this date let No. <u>DACW 33-85-D-0012</u> Delivery Order <u>(</u>		Fred / HIISON
1.	SUBJECTS DISCUSSED (Note: delete, or add) Individual Protective Equipment - Ear, h. Prevention of Falls - watch recto Safe Lifting Techniques - radsolygos; Emergency Communications - Fire Prevention - NA Sanitation, First Aid - OK Tripping Hazards - Trash, hose, nails in Staging Ladders, Concrete Forms - NA Hand Tools - NA Portable Power Tools - NA Woodworking Machinery - Equipment Maintenance (zero defects) - O Hoisting Equipment - Ropes, Hooks, Chains and Slings - Electrical Grounding, Temporary Wiring - Lockouts for Safe Clearance Procedures - Welding - NA Excavations - Loose Rock and Step Slopes - very in Explosives - NA Water Safety - Others - Ste May	ard hats, eye ty thing tunber - A Electrical,	pressure, moving parts
	PREPARED BY: Field Engineer or Drilling	Supervisor	
2.	Exposure: Total on site job hours: Slam Personnel SIGNATURE: Project Manager	James de la companya	·
3.	FORWARDED TO: NED, Waltham, MA		

Hole No.

DRIL	LING LO		ivision ALF D	INSTALI	ATION			SHEET OF 7 SHEETS	s
1. PROJECT		- \ -					4" roller bit SHOWN (TBM of MSL]
2. LOCATIO	N (Coordin	ates or St	ation)	M		LEVATION	SHOWN (IBM OF MSL	, , ,	
3. DRILLING	Clic			12. MAN	UFACTUR		GNATION OF DRILL		7
CE	Askil	cil	16/m ITTIT	13. TOT	AL NO. OF	5 20 OVER-	DISTURBED	UNDISTURBED	1
4. HOLE NO and file n	. (As show umbet)	n on draw.	ing title		DEN SAMP		1 7		4
5. NAME OF					AL NUMBE				\dashv
6. DIRECTION	ON OF HOL		^	 		ļ ST A	RTED C	MPLETED	_
∠ VERT	ICAL	INCLINE	DEG. FROM VERT.	16. DAT				<u>- 24 - 87</u>	4
7. THICKNE	SS OF OVE	ERBURDE	N 153,2 FT		VATION TO			7 8 ,	
8. DEPTH D	RILLED IN	NTO ROCK			ATURE OF	INSPECT	OR	12	-
9. TOTAL D	EPTH OF	HOLE	/58.3	· //	% CORE		MC GAJ REMAI	ave -	-
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIA (Description)	LS (RECOV- ERY	BOX OR SAMPLE NO.	(Drilling time, water weathering, stc.,	er loss, depth of	
-	Ь	С	d		•	f	9	10.000	士
			SET ODEX CASING	73			WaTer @	66'.	E
	_	1	70,5 FT,				Some pre	, C1-14	F
							some pre	27714	E
287	80=		No Samples						上
'	=				4				F
	-								E
									E
	81_=						Clean with	,	F
	0'-						FishTail a		E
							roller bit		E
						ļ		ent time with the life for a security " exterior	丰
			Brown and arry Gra	vel.			Drivel	86	Ė
	82 —		To 1.5 in some so		(9")	1-1	88.9' of 1	75/02	² =
	_		(GP)				88.9 27 /	Troas	丰
									E
							Clean with	74V41	E
	83_						and ruller b		上
	=								E
							0.6 FT. 5100	egh)	上
			TOP- Sand, coarse	Гъ		, ,		Ç.	F
	9// =		fine possible we	154	(12")	7-5	Drive Z	8 45	E
	84 —		Bottom 2 in - Brown						士
			Course To fine Sand				889' of Ar	ods 65	F
1	=		mostly med. To fine,						E
1	=		some med to fine ar	avel,					F
282	85-		Tr. nonplastic fine	cs,					F
			very d'ense	/					E
	-		cSP)						F
		+							E
	26	!			 -				壬
]							F
		1				, man , man , m	,		E
	=	1		•			Eclean To 8	7.7.	E
	87 _]	Gray and brown, Gravelly		(3")	J- 3	Drive 3	117/0.4	F
	[=	1	Sand, few angular grai	je l	(2)		889 HA rads		E
	=	1	frags to 1.25", coars	-70					F
]	Troys 10 1.20, code						\$\frac{1}{2}
	- C	1	med, mostly coarse	and the second of the second					
	88	1	tr. non-plastic fin	e >					
	1.5		(SP)						
	- 10 m								
	190 -					Les			

OJECT		(COIII .	Sheet) ELEVATION TOP OF HOLE	TION		Hole No. FD-87-1	
Frank	lin F	7 11 S	Date	c % CORE	BOX OR	OF SHEETS REMARKS	
LEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIA (Description)	RECOV- ERY	SAMPLE NO.	(Drilling time, water loss, depth of weathering, etc., if significant)	
<u>a</u>	89 _	С	d	e	T .	clear To 89. / Ft	
			Brown Sand, Coarse T	70		Drive 4/ 38	
			med, Some gravel		1-4	Drive 4 38 65	
	_		1.5 in, Tr. non-pla:			93,9' of A rods 70	
.78	90 -		'	1		927 01 11 100 2	
	-		fines, very dense	(9")			
			(92)				
			(31)			(112 and 2 of 916'	
	91-					(No sample at 91.6'	
						due to error in	
						dopth measurement	
-						by driller)	
	92-						
	\exists						
	=					clean to 93.7'	
	93-					0.6' Stough,	1
			Gray Micaceous 5	;17y			_
			,	/	J-5	Drive 5 40	-
	=		fine Sand, very			74	-
	94 _		dense			67/0,3	'
	77 -		(SM)	(10")		98.7 of A rods	
	=						-
							-
	95						
73							
	=						
	96						- 1
	\exists					Clean TO 96.4	-
			have			, 79	
			Same as above			Drive 6	
	97		(2W)			Drive 6 29 52 98.9' of Avods 94	
					56	98.9 of 440es 94	
				(۳۱/			
				Ţ.,			
	98-					0.6' Slough	.
				and the second s	And the state of		
						26 Clear TO 398-7	
						True 7 - 363	
	99 —		Same as abou	e on	3-7	Crear TO 987 Drive 7 25 103,9 444 66	
40 1				187		103.9 10f A 10d 3	
			(SM)				
67	po=						

	LOG	(Cont S	Sheet) ELEVATION TOP OF HOLI	INSTALLATION			Hole No. FD -	
-Kavk	clin F	alls	Dan	INSTALLATION			OF T	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~
EVATION	DEPTH	LEGEND	CLASSIFICATION OF (Description		% CORE RECOV- ERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water los weathering, etc., if sig	ss, depth of nificant)
<u>a</u>	ь	С	d		e	f	<u>g</u>	
							,	
							0,5' Slough	
	_						t	Miles of the American State of the American
	101 —						ala malala	39
			e.				Clear TU 101,2	
			Same as a	above		1 01	Drive 8	70
	_		(SM)	-		7-8		75
	102	-		• •	(10")		108.9 of Arods	
					CIO J		v i de george (de grande de la respectation de production () e de de la respectación de la respectación de la	enger og som syntropisk film til film film til film film film film film film film fi
	_							
	103							
		-					7	
	-						,	
	. =							
	104_				u-		clean to 103.9	
	- TUI						Drive 9	36
	. =		Similar To	a pove.		-		63
	-		Brown micacec	ous .		1-9		-
			silty tir	16			108.9' of Alods	77
.62	105-		Sand Very	dense	(10")			
	=		(SM)				and the second of Assembly de Second control of the Second control	, , , , , , , , , , , , , , , , , , ,
			(3/0/)					
	=							
g : -	106-							
	_				ľ		clean to 106.4	
	\exists						DRIVE -10	37
	107_		Same as	apove				A /
	\exists		(SM)		1111	1-10	113,9] [6.	46
							of A real	73
					4		**	
	108_							
						-	and the second of	
			·				14	
	109-						clean to 109.0)
							DRIVE-11	<i>5</i> 7
		anga atiki ili sasa					- 404	
4	-		Same as	above	(15)	الدل	113.9 Pc. 9 0-rods	
257	00 I							
			(SM)					
		1						
	n.			1240 1015 1015				
			Brown setty fine	Sal M			i de la companya de La companya de la co	
			for 18" bolls" The gray public sta					

OJECT		(Cont S	<u> </u>	INSTALLATION	· · · · · · · · · · · · · · · · · · ·		Hole No. FD -8	4
From	DEPTH	LEGEND	CLASSIFICATION OF		% CORE RECOV-	BOX OR	OF / REMARKS (Drilling time, water loss,	depth of
<u>a</u>	ь	с	d		ERY e	f f	weathering, etc., if signifi	cant)
	112 _							
	_		,			J-12	112.6	
إينتفة							710.0	
	1/3							
	_							
	_							
							0.2' 3 lou	gh)
-	114						clean to 114	<i>"</i> <u> </u>
	_		Brown Selty	fine to				4
			medium SA	ND, mica,	1, ,,			35
į	_		Very Dens	e	(13')	1-13		65
52	1/5_		•				•	70
	_		(SM)				115.3	78
	=							
	_							
	116-							
							0,3' Slough	······································
	Ξ			*		-1	clean to 116.5	7
	=		Light brown &	nica crous				37
50	117_		with hime to	medium	(11)			_
	, =		sofig fact to a	De Co	(15")	J-14		46
			SAND, Vary	bense			_	67
	=		(S/M)				1/7:7	
	118_							
	=							
	\exists						O, l' Slough	
	119						clear to 119.0	2
	"' 🗆		Light Brown M	ricaceous			Lea A Dill:	45
	=======================================		Sity fine to K	nedium			loss of Dulling	
			Sand, Very de	use	(15)	J-15	fluid occurred at 118-119	90
	120					19213	approx 75 to	88
			(SM)				120,4 7	
	=						4" casing inst	alled
							TO 120 4T.	
	121_						·	
							10,2' slough	
							clean to \$21.5	
N. Jack			Brown mica	ceou s			Drive 16 6	7 6
	122-		silly fine				,_ c 7	'5 📲
						\ <u>\I</u> L	/25 ***	7
			very dense		('Z'')	T :		
			(SM)					
	123=							
				Total				
				\ \				
	124 -					148		

OJECT			iheet) ELEVATION TOP OF HO	INSTALLATION	***************************************		Hole No. FC	SHEET 5
Frankl	in Fa	Ils ?	Dam, NH.		9/ 5555	BOX OR	REMA	OF 7 SHEETS
LEVATION	DEPTH b	LEGEND C	CLASSIFICATION OF (Descriptio d		% CORE RECOV- ERY e	SAMPLE NO.	(Drilling time, wa weathering, etc., g	ter loss, depth of if significant)
	124 _						O.l.	slouat)
							Drive 17	31
			Same as ab	ων e				- ,
	125		(SM)			1-17	129 ft of Aruds	52
	_				at")		Aruds	66
					-			
	126-							•
	-						1101	_
							O, 1'Slough Clean TO 17(5
					2		Drive 18	35
240	127_		Same as a	bove	-			48
070	127-					J-18	130 ft of A-rods	56
	_=	-	(SM)		(9")		A-Yods	<i>5</i>
	\equiv							
	128-		·		-		······································	
	-							
								-
	\exists							
	129				ļ		clean to 129.	. 0
]						Drive 19	22
							-	40
			Same as a	bove)_19	135 ft of Ands	
	130		(SM)		(ai")	` ' '	Arods	50
			- /					-
	\exists						•	
	131 -	.						
	.,, =	1		•		-	ا ہ	slowak.
							0,1' Clean TO 131.5	
	- =						Drive 20	25
	132		Same as a	bove		1 20	135 fr of	45
			(SM)		(''I')	J- 20	A-100 5	5も
, .			· · · · · · · · · · · · · · · · · · ·					J o j
	=						·	
	/33—					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
								e de la companya del companya de la companya del companya de la co
	Ē							
	134—						21eq 79 134	
				1			Drive 21	73
		3 TEE.	Same as	abøV€				
			csw)			1 71		
	135 -		7	277				

RILLING	LOG	(Cont !	Sheet) ELEVATION TOP OF HOLI				Hole No.	D-8 1-1
JECT FY	inklin	Fa	11c Pam	INSTALLATION				SHEET 5
EVATION	DEPTH	LEGEND	CLASSIFICATION OF (Description		% CORE RECOV- ERY	BOX OR SAMPLE NO.	(Drilling time, u	ARKS vater loss, depth of the significant
a	ь Вь	С	d		e	f		g
	126 _							
							Clear TO 13	6.5
	_		Same as a	bove			Drive 22	22
ふ の	137		(SM)				140 ft of A-rods	41
مرية مر			,		(44")	J-22	A-rods	• •
	_							73
	_						•	
	.138— <u> </u>							
	·128 _ _ _							
	_							
			-				clean to 13	59.0
	139		Orange and oro	inge-brown			Orive 23	51
			Silty micace				142 ft. of	44
	_		,			J-23	A-rods	• •
	140	·	med to fire,		(8")			101
	140		Coorse To fine	gravel				
			TO lin, very	dense				
	=		(SP)					, k
		·						
	141							
	_				-	~,~~; _~; ~~~	encesomental en la company	ATTER CATALOGUE AND
	_						0.5' of slow	gh
	142			1				41,5
			Brown and gray	Sandy		(211	Drive 24 145 ft. of	1035
			gravel, coarse	eto tine	(7")	J-24	A-rods	88/0,3'
			gravel TO lin	, coarse				
	143-		To fine, mos				·	
-	145 _		1					
:		1	To med. sand.	, 1140-47				
	_		very dense (GP-GW)					
	144	1			-			
· vinere								•
	_	***	Brown & gray so	indy gravely			Clean To 14	130
	145 -		coarse To fine	gravel To	(3")	\$-25	150'ef A-rods	139/0,3
	_	1	1,5 in, coarse	To medium				
Sauce et e			mostly coarse	, sand,		$1 \sim$		
			some nonplas	lie times Ductaces				
	148-		(GP-GW) 1	71 57.5				
	- 100 - 100		200 A			}		
		$\mathbf{J}_{\mathbf{A}^{\prime}}$						
20	47	1.	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2					
			brown Sund,	medition				
		‡ ;	TO THAT TO THUS DEMY	nonplessivity		1.70		
		1			E)			

ILLING	LOG	Cont S	Sheet) ELEVATION TOP OF HOLE	INSTALLATION	· 		Hole No. F	SHEET 7
	lin F	-alls	Dan		% CORE	BOX OR	REMA	OF 7 SHEETS
EVATION	DEPTH	LEGEND	CLASSIFICATION OF (Description		RECOV-	SAMPLE NO.	(Drilling time, wa weathering, etc.,	iter loss, debth of
a	b 148_	С	d		e	f		<u> </u>
	770 —							
	_							
	_							
	149							
	147							
								146
·			Brown Sand,	coarse to	-		Clean TO Drive 27	149,6'
	=		fine, mostly n			J-27	155 ft of	112/0,5
	150_		few availet		(6")	7 2 7	A yods	C (C)
	_							
			0.75 in., very	061126				
	=		(SP)					
	151 —							
	=			. •				
					1			
	\exists							
ا س								
15	152-							
	\exists							•
	_							
	_		:		-			
	153-	-						*
	\exists				-			
			TOP 16"- Broken	TO VERY	-			
	=		broken gray G					
	154-		with brown s	ilty clay	Rec=			
	-		WILL Drown S	/	98%	-		
	=	•	filled joints	. 1				
			Mid 38" - Mas	sive hard		Run		
.]]		aray GraniTe	few		1		
	155 —		high angle je	DIATS WITE		1		
	· /-=		some silty cl	av in			•	
			some silly	1	Dmn-			
		-	joints	.1 .1.	KOD=		1	
	156-		Bottom 6" - Very	broken	84%		-	
	=		hard gray Gr	aniTe .				, v
A			7	EITV				
	_		with some s	otains				
2 ı =	157		clay and iro	1. 214113				
210	/57— —		along joints					
Salas and the second		egggi, a sama sikara a		en de la companya de La companya de la co				
	153							
9	1							
	-		BOTTOM OF BOT	in at				
			158.3					
* # * * *	164		ر بوداد د به د د					
				10 m				
TOTAL CONTRACTOR								

STANDAL PENETRATION TEST

 Project <u>Franklin Falls Dam</u>
 Page 1 of 14

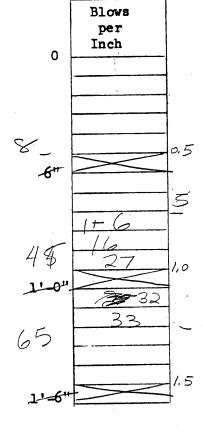
 Hole No. <u>FD-87-1</u>
 Date <u>8-5-87</u>

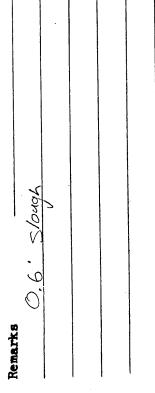
Depth of Test 8/.6 to 82.3

Blow	Gage Reading	Penetration per Blow		Blows per	33				
><			0	Inch	-1, 1				1
<u> </u>				2,	- 2				
2				7	- 303				
3 .				- X + /	-1008				
4			86	32					
5			5 .	33	0.5				
6			86		_				
7				30					
8			75/0.2	15			•		
9									
10									
11					1,0				
12			1-0		1,0				
13				+ £,	1.				
14						1			ľ
15									
16					•	.]	İ		
					TI				1
17			٠ - ١٠		1.5			İ	
18 19			1-6"						
					_	2			
20					•	Kemarks			
						E U			

Depth of Test <u>83,5</u> to <u>84,7</u>

Blow	Gage Reading	Penetration per Blow
1	0.1	0.1
2	,25	0.15
3	132	0.15
	, 4	0.08
5	,45	,05
6	,5	,05
7	,	13
8	,55	,05
9	.6	,05
10	.62	,62
11	.65	,07 ,07 ,03 ,03
	,68	,03
12 13	.70	,02
14	.72	,02
15		
15 16		
17		<u></u>
18		
19	:	
20		





MRO Form 1713, 1 Dec 78 (Temp)

Project Franklin Falls Dam

Page 2 of 14

Hole No. <u>FD-87-1</u>

Date 8-6-87

88.9

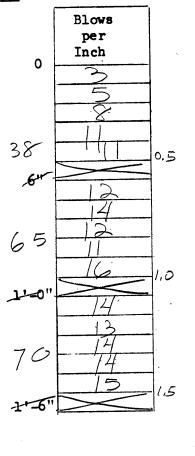
Depth of Test <u>86.8</u> to <u>87.2</u>

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		,
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

0	Blows per Inch				
(),H 8m	46 51	0,5			
1 1-0 11		1,0			
1'=6"		1.5	Drive 3		
			Кешатка		

Depth of Test <u>87.1</u> to <u>90.6</u>

Blow	Gage Reading	Penetration per Blow
		·
11		
3		
3		
<u>1</u> 4		
6		
7		
8		
10		
10		
11		
12		
13		
14		
15		
16	<u> </u>	
17		
18		
19		
20		



ò				
>				
-	L of t			
£	Кематкв			

MRO Form 1713, 1 Dec 78 (Temp)

STANDAL PENETRATION TEST

 Project Franklin Falls Dam
 Page 3 of 14

 Hole No. FD-87-1
 Date 8-6-87

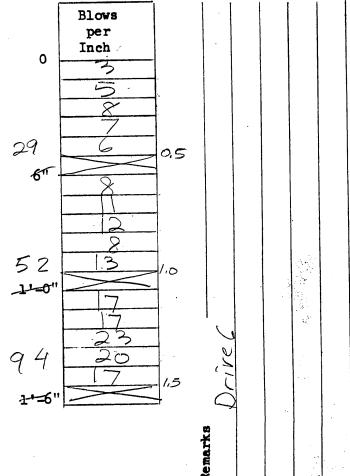
Depth of Test 93. to 94,4

Blow	Gage Reading	Penetration per Blow
>><		
11		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

Blows per Inch					
40 11 12	as				
74 14 21	1,0	5/0494	1		
67 22	emarks	O.G. Slo			

Depth of Test 96,4 to 97,9

Blow	Gage Reading	Penetration per Blow
2 3	_	
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
	and a second	



MRO Form 1713, 1 Dec 78 (Temp)

STANDAN PENETRATION TEST

Project Franklin Falls Dam	Page <u>4</u> of <u>14</u>
Hole No. FD-87-/	Date 8-6-87

Depth of Test <u>98.1</u> to <u>99.6</u>

Blow	Gage Reading	Penetration per Blow		Blows per				
<u>><</u>			.0	Inch				
1							.	
2								
3				2			.	
4			01	9				ı
5			26	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	5		i	l
6			26 26					
7								
8								
9				13				
10			65 1=0"	15			.	
11				16 1,0	,			
12			1-0"					
13				4		Slough		
14				13	' 17.	100		
15				20		8		
16			d (.	22		`		
17			86	7/15	5	0		
18			1-5"		(—p 1	O		
19								
20					Remarks	1.		
			·		188			
			Ì		آ ۾			

Depth of Test 100,7 to 102,2

$>\!\!<$	Reading	per Blow		Blows per Inch		
			0	4	-	-
1		_		<u> </u>		
3						
3				8	. "	
4			> 2 A	12		
5			39	10	05	
6			-64		-	
7			, i	16,		
8			•	17	1	
9				3		
10			70	12	1	
11				15	1,0	
12			-1-01			
13			_	15	ļ. ·	1 9
14			ļ	14		X of S long 1
15				14	_	0 0
16			75	15	1	
17				17	1.5	A in
18			1-6"]	
19	.,		1			40
			1		ا يو	8
20	+		1		Ì	Remarks
			1			

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD (ETRATION TEST

Project Frankin Falls Dam Page 5 of 14

Hole No. FD-87-1

Date 8-6-87

Depth of Test 103, 9 to 105,4

Blow	Gage Reading	Penetration per Blow		Blows per	·		*		
><			0	Inch					
1								,	
2				6	·				
3				7	1				
4			2/	0					
5			26	10	0,5	1 1			
66			36 6"	11/0	1				
7				10	-				
8					ļ ·				
9			63	12	4	1			
10			0	1.	4			}	
11				13	1.0			1	
12			1-0"		 				
13				11.	-				
14				13	-	, 24			
15			-, -,	13	4	110			
16			77	10	-	7			
17				20	1.5	[2			
18			-1-1-6"		_	\vec{a}			
19						m			
20					•	Remarks			
						BH			
			_	•	1	×	1	ļ	1

Date 8/7/87

Blow	Gage Reading	Penetration per Blow			Blows per Inch		pai	
><				0			3	
1			1		6	(3))CCU	
3			4		7	37	0	
3			-	•	7		٦,	
4			1		7		4	(\$p)
5			1	•	10	0,5	9	9
6			4	-611 -			Condition	K
7					8	<u></u>	3	4
8			4		9	46/	1.4	8
9 10			-		9	/ <u> </u>		
10			_		10	Ţ	drivins	N De
11			-		10	1,0	0	re
12			4	1-0"		DRIVE	7	
13			-		#1	. 3	100	20
14					15	A3)	undsua	Slough
15			4		13	0	3	\sim
16			_		17			
17			-			1.5	3	NO
18			_	1-6"		1		
19			_				5	
20		<u>L</u>	_			•	Кешалка	1 1

MRO Form 1713, 1 Dec 78 (Temp)

Project Frankin Falls Dam

Hole No. FD-87-1

.

Page 6 of 14

Date 8-7-87

vods 1/3,9 still up 5.2 108:7 Drove to Seat Samples to 109.0

Depth of Test 109.0 to 110.5

Blow	Gage Reading	Penetration per Blow
1		
2		
3 .		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	/	,	,			
1	U-1/	Į	W-2014	1	i	1
	DIOMR	717	\vec{z}			
	Blows per Inch	7	\S		10	(
0	8		1		hummer momentail	
_	10 .				3	
(57)	12				द्व	
	/3		₩.		Z	
	14	0.5	0	20	3	19
6"	18		1		2	7
	18	١.	cont 0.3 fr	on 108.7	4	1657
(90)	17		d	Ma	1	•
	18] :	2	1	8	5.
	19	1.0	1000	mis	T.	2
1-1-0"		,	\sim	00	P	δ
	1/			108		Z
(00)	17	1		- 1	8	0
C C	19	1		L		4
5	23	1.5		100%	6	rest arm during
1-1-6"		1). 5		Washed	Dri	æ
			m	7	*	1
			ırk			
			Remarks			
				•		

Blow	Gage Reading	Penetration per Blow
\sim		
1		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	U-12		\	4
0	Blows per Inch		Samples at 111.	net arn
(4-1)			Sample	6" 42
Gr.	10	0.5	1.5 but	this
34)	5 7 6	RIVE-	1 4 11	not all
1'-0"	8	1,00	Washed	internita 19
(19)	10	-	2.4'	mmes
1-6"	24	/, 5	lough 0.4	ved hui
		Remerica		rets

STANDARD I LITRATION TEST

Project Franklin Falls Dam

Page 7 of 14

Date 8-7-1987

Hole No. [-D-87-1

Depth of Test //3.8 to 1/5.3

Blow	Gage Reading	Penetration per Blow
11		
2		
3 .		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	0,0		•				
0	Blows per Inch		from 113.8	Wash	arm uk		
35)	7 6 8 8	m 0.5	Sampled	of during	rested c		
(S)	9 /3 /4	DRIVE	Slongh 0.2"	s observed	. driller	, g,	2
d'=0"	15	/,0	114.0	condition	Asmi	Sample	•
78	15 16 17	1.5	of to dealth	musua/	amplini	not 6"0,	
		., 2	lobeshod	No u	Ø 10	the 1	•

Blow	Gage Reading	renetration per Blow	•	Blows per	and 0,3x		- &-
><			0	Inch	10/2		١ ١ ١
1				5		2	1 2
<u>2</u> 3				10			130
3		, , , , , , , , , , , , , , , , , , ,	(37)	9	4	120	8
4				7	\	3	8
5 6				6	0,51		1
6			611		1	X/th	obser
7				7	DRIVE	1 K	00
8			\sim	8	j j	1 7	
9 10			(46)	10	0	micacions,	100
10				10	<u> </u> -	ZCCo	13.5
11					1,0	.2 7	suditions !
12			1-0"		+	2 7	3 3
12 13				11	,	1 3	\$ 3
14				12		SANI	2
15			(12)	14	4	Sown Ser	unusuel Conditions boon
16			(67)	14	ļ.	E DO	12 6
17				16	1.5	7]. 3	200
18			1-6"		_	Light Br Modium	lund
19			:			a hoa	100
20					-	nemarks	1 5

MRO Form 1713, 1 Dec 78 (Temp)

Project Franklin Falls Dam

Page 8 of 14

Hole No. <u>FD-87-/</u>

Date 8-7-1987

Depth of Test 1/8.9 to 120-4

Blow	Gage Reading	Penetration per Blow
11		
2		
3 .		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		:
19		
20		

	V-15		7/				٠.
0	Blows per Inch	0.1 ft.	desthe	٥.	i to		I
(45)	7 9 12 12	5/00gh	between	- 54	sill for	Cense	
6° -	13 16 18 17	×-15	d occurred	100 grla	micacions	Very	
10"	28	1.0 d	illing Au	1x 70 to	u mese	Sano	
1-5	14 15 17	1,5	p or co	of approx	11961	medun	
		em er ks	9/	10		-	

1-16

Depth of Test |2|3 to 122.8

Blow	Gage	Penetration per Blow
1		
2	Ì	
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
12		
14		
15		
16		
17		
18		
19		
20		

	Blows	
·	per	
	Inch	
0	2	
	10	
	10	
	12	
/ 10	16	
60.	18	0.5
est .		
-0	16	
	12	
	13	
75	14-	
	18	1.0
3.1.611		1,0
J	16	
	1:5	
87	18	1
0 '	20	
	18	1,5
3-1-617		11,5
~1 -0		_1

	Zpane		Jara	, d, O	
	Jahren A. ropor Lapone	3	are sare	え	
	77	Luin	l	Samo	
	/ Lance	Unio a		L cat to	0 /
	4	77	0		
Description	Comments.	her fine	J. 100	Sand	0
-	•	•	,	•	

MRO Form 1713, 1 Dec 78 (Temp)

Project Franklin Falls Dam

Page 9_ of 14

Hole No. <u>FD-87-/</u>

Date 8-11-87

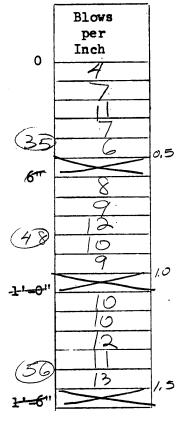
J-17
Depth of Test | 24,2 to 125.7

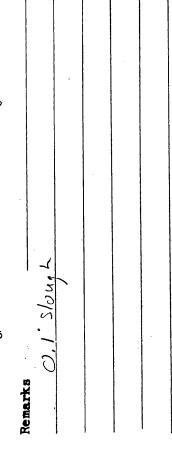
Blow	Gage Reading	Penetration per Blow
<u>>><</u>		
1		
2		
3 .		
4		
5		
6		
7		
88		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

0	Blows per Inch					
(31) -6m	5 0 0 7	05				
(52)	9 10	1.0				
1'=0 ".			1' Slouah	f		
11-6"	14	/.5	Remarks		-	

J-18
Depth of Test 126.4 to 127.9

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
<u>դ</u> 5		
6		
7		
8		
9 10		
10		
11		
12		
13		
14		
15		
16		
17		
18		
. 19		
20		





MRO Form 1713, 1 Dec 78 (Temp)

Project Franklin Falls Dam

Page 10 of 14

Hole No. FD-87-/

Date 8-11-87

J-19
Depth of Test 129.0 to 130,5

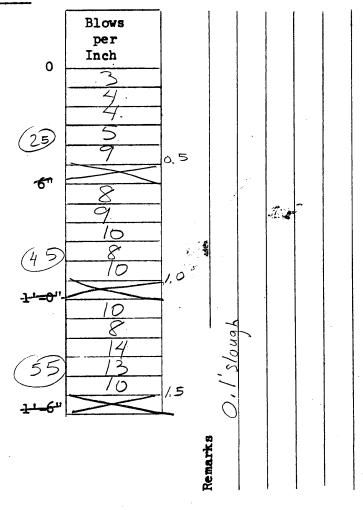
Blow	Gage Reading	Penetration per Blow
2		
3 .		
3 . 4		
		_
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		E .
19		
20		

	Plana	<u> </u>	1	1 1	1	1	
	Blows per						
	Inch						
0	2						
	4						
·	4			}			
(22)	4.						
22) Br	8	0,5					
64							
	/						
	\$						
							1
40	10				ľ		1
1-0"		1,0					1
2 40	9.					į	1
	11	-	ı				[
	10		<u>-</u> .				
(50)	10						ļ
	10	1.5					
1'-6 "							1
			øj .				
			ark				
			Remarks				
				1	,	,	- 1

8-12-87

J-23
Depth of Test 131.4 to 132.9

Blow	Gage Reading	Penetration per Blow
1		
3		
3		
4		
5		
6		
7		
8		
9 10		
10		
11		
12		
13		
14		
15		
16		
17	·	
18	·	
19		
20		



MRO Form 1713, 1 Dec 78 (Temp)

STANDARD 1 TEST

Project <u>Franklin Falls Dam</u>

Page | of 14

Hole No. <u>FD-87-1</u>

Date <u>8-14-87</u>

Depth of Test 134.0 to 135.5.

Blow	Gage Reading	Penetration per Blów
$\geq \leq$		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		·
16		
17		
18		
19		
20		
<u> </u>		

0	Blows per Inch	
0	Q 4	
23	5	
1541		0,5
(47)	8	
	10	1.0
1-0"	10	
	9	
(52)	11	1
-1-6 "		1,5

Hammer adopter weld failed and hammer
not coming straight downon rods
consistently. Diriller requested replacement

1-22

Depth of Test 136,5 to 138.0

Blow	Gage Reading	Penetration per Blow
1		,
2		
3		2
14		
5		
6		
7		
8		
9		
10		
11		
12		
13	_	
14		
15		
16		
17		
18		
19	_	
20		
	1	

. 0	Blows per Inch	
ŭ	2 5 4	
(Z)	5	9 5
64	5 7	
41)	9	
1 '=0"	14	1,0
(73)	12	-
1-6"	00	1.5

Remarks

Corb + Lopmer merring wound a lot

MRO Form 1713, 1 Dec 78 (Temp)

Project Franklin Falls Dom

Page 12 of 14

Hole No. <u>FD-87-1</u>

Date 8-14-87

J-23
Depth of Test 139.0 to 1405

Blow	Gage Reading	Penetration per Blow
>><		
1		
2		
3		
14		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		•
16		
17		
18		
19		
20		

0	Blows per Inch	
J	7	
	12	-
(5)	10	0.5
-6"		0,5
	8	
(44)	8	-
	12	1.0
-1-0"	16	
	20	
(10 1)	24	1,5
-1-1-6**		,,

J-24
Depth of Test 142,0 to 143.5

Blow	Gage Reading	Penetration per Blow
$\stackrel{>\!\!\!>}{\longrightarrow}$		-
2		
3		
14		
5		
6		
7		·
8		£
9 10		
10		
11		
- 12		
13		
14		
15		
16		
17		
18		
19		
20		

0	Blows per Inch	
(103)	25	
BIT	32	0.5
03	26	1.0
"0-لا		
11-6"		1,5

MRO Form 1713, 1 Dec 78 (Temp)

Project Franklin Falls Dam

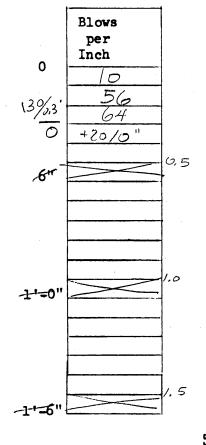
Page 13 of 14

Hole No. FD-87-1

Date 8-17-87

J-25
Depth of Test 144.8 to 145.1

Blow	Gage Reading	Penetration per Blow
> <		
11		
2		
3 .		
4		
5		
6		
7		
8		-
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		:
19		
20		



Hard cleaning before sample Taken.
Hammer + 1845 bouncing after 0.3.

J-26
Depth of Test 147.1 to 148.0

Blow	Gage Reading	Penetration per Blow
1	·	
2		
3		
14		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
	1	1

0 17 6"	Blows per Inch 13 15 15 27 21=16+5 42 35	5
11-0"		1,0
- <u>1</u> 6"		1,5

Remarks

Project Franklin Falls Day

Page 14 of 14

Hole No. FD-87-/

Date 8-17-87

J-27
Depth of Test 149,6 to 156,5

Blow	Gage Reading	Penetration per Blow
1		
2	<u> </u>	
3		
4		
5		
6		,,
7		
8		
9		
10		
11	100	
12		
13		
14		
15		
16	<u> </u>	
17		
18		
19		
20		

0	Blows per Inch	0,5			
11-0"		/, 0			
<u> </u>		1.5	- Calibria de la calibria del calibria de la calibria de la calibria del calibria de la calibria del calibria de la calibria de la calibria de la calibria del calibria de la calibria de la calibria de la calibria de la calibria de la calibria de la calibria de la calibria de la calibria de la calibria de la calibria de la calibria de la calibria de la calibria de la calibria de la calibria de la calibria del calibri		

5-28
Depth of Test 152.1 to _____

Blow	Gage Reading	Penetration per Blow
1		
2	<u> </u>	
3		
4		
5		
6		
7		
8		
9		
10		
11		
12	<u> </u>	
12		
14	<u> </u>	
15	<u> </u>	
16		
17		
18		
19	<u> </u>	
20		

